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.

Almost 20,000 undergraduates and more than 4,800 graduate students comprise the Old Dominion student body. Our community includes more than 740 international students with 106 foreign countries represented. Clubs and organizations for nearly every interest – more than 350 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 Student Success Center 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 and Professional Studies, Engineering and Technology, Health Sciences, and Sciences. Interdisciplinary options are also available. Our new LeADERS program provides a pathway for students to participate in high impact learning activities in- and outside of the classroom. Specifically, the program encourages undergraduate students to incorporate Leadership, ePortfolios, Academic Internships, Diversity, Entrepreneurship, Research, and Service learning (LeADERS) courses and experiences into their degree program. ODU 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, Hampton and Portsmouth. Through our distance learning programs, we deliver undergraduate courses and programs online to students located throughout the Commonwealth of Virginia, the nation and the world using a variety of delivery technologies.

The Perry 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.

Augustine O. Agho, Ph.D.
Provost and Vice President for Academic Affairs

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.
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#### Fall Semester 2019-20

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<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
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<tr>
<td>August 24</td>
<td>Saturday</td>
<td>Classes begin</td>
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<tr>
<td>September 2</td>
<td>Monday</td>
<td>Labor Day Holiday</td>
</tr>
<tr>
<td>October 12-15</td>
<td>Sat-Tues</td>
<td>Fall Holiday</td>
</tr>
<tr>
<td>November 5</td>
<td>Tuesday</td>
<td>Last day to withdraw from classes</td>
</tr>
<tr>
<td>Nov 27-Dec 1</td>
<td>Wed-Sun</td>
<td>Thanksgiving Holiday</td>
</tr>
<tr>
<td>December 6</td>
<td>Friday</td>
<td>Classes end</td>
</tr>
<tr>
<td>December 7</td>
<td>Saturday</td>
<td>Exams begin</td>
</tr>
<tr>
<td>December 13</td>
<td>Friday</td>
<td>Exams end</td>
</tr>
<tr>
<td>December 14</td>
<td>Saturday</td>
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</tr>
<tr>
<td>December 14</td>
<td>Saturday</td>
<td>Degree Conferral date*</td>
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* Degrees may be conferred on additional dates during the semester pending completion of all degree requirements.

#### Winter Term 2019-20

<table>
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<tr>
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<tr>
<td>December 16</td>
<td>Monday</td>
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<tr>
<td>December 25</td>
<td>Wednesday</td>
<td>Holiday</td>
</tr>
<tr>
<td>January 1</td>
<td>Wednesday</td>
<td>Holiday</td>
</tr>
<tr>
<td>January 3</td>
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<td>Classes end</td>
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#### Spring Semester 2019-20

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<th>Day</th>
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<tbody>
<tr>
<td>January 11</td>
<td>Saturday</td>
<td>Classes begin</td>
</tr>
<tr>
<td>January 18-20</td>
<td>Sat-Mon</td>
<td>Martin Luther King, Jr. Holiday</td>
</tr>
<tr>
<td>March 9-14</td>
<td>Mon-Sat</td>
<td>Spring Holiday</td>
</tr>
<tr>
<td>March 31</td>
<td>Tuesday</td>
<td>Last day to withdraw from classes</td>
</tr>
<tr>
<td>April 27</td>
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<td>April 28</td>
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<tr>
<td>April 29</td>
<td>Wednesday</td>
<td>Exams begin</td>
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<tr>
<td>May 6</td>
<td>Wednesday</td>
<td>Exams end</td>
</tr>
<tr>
<td>May 8, 9</td>
<td>Friday, Saturday</td>
<td>Commencement Exercises</td>
</tr>
<tr>
<td>May 9</td>
<td>Saturday</td>
<td>Degree Conferral Date*</td>
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* Degrees may be conferred on additional dates during the semester pending completion of all degree requirements.

#### Summer Term 2020

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<tr>
<td>May 12</td>
<td>Tuesday</td>
<td>Maymester begins</td>
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<tr>
<td>May 18</td>
<td>Monday</td>
<td>Session 1 and 3 classes begin</td>
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<tr>
<td>May 25</td>
<td>Monday</td>
<td>Holiday - no classes held</td>
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<tr>
<td>May 29</td>
<td>Friday</td>
<td>Maymester ends (including exams)</td>
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<tr>
<td>June 27</td>
<td>Saturday</td>
<td>Session 1 classes end (including exams)</td>
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<tr>
<td>June 29</td>
<td>Monday</td>
<td>Session 2 classes begin</td>
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<tr>
<td>July 3</td>
<td>Friday</td>
<td>Holiday observed - no classes held</td>
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<tr>
<td>August 7</td>
<td>Friday</td>
<td>Session 3 classes end (including exams)</td>
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#### Fall Semester 2020-21

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<td>September 7</td>
<td>Monday</td>
<td>Labor Day Holiday</td>
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<tr>
<td>October 10-13</td>
<td>Sat-Tues</td>
<td>Fall Holiday</td>
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<td>November 10</td>
<td>Tuesday</td>
<td>Last day to withdraw from classes</td>
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<tr>
<td>Nov 25-29</td>
<td>Wed-Sun</td>
<td>Thanksgiving Holiday</td>
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<tr>
<td>December 11</td>
<td>Friday</td>
<td>Classes end</td>
</tr>
<tr>
<td>December 12</td>
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<tr>
<td>December 18</td>
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<tr>
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<tr>
<td>December 19</td>
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* Degrees may be conferred on additional dates during the semester pending completion of all degree requirements.

#### Winter Term 2020-21

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<tr>
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<td>Friday</td>
<td>Holiday</td>
</tr>
<tr>
<td>January 8</td>
<td>Friday</td>
<td>Classes end</td>
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#### Spring Semester 2020-21

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<td>Saturday</td>
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<td>January 16-18</td>
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<td>March 8-13</td>
<td>Mon-Sat</td>
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<tr>
<td>March 30</td>
<td>Tuesday</td>
<td>Last day to withdraw from classes</td>
</tr>
<tr>
<td>April 26</td>
<td>Monday</td>
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</tr>
<tr>
<td>April 27</td>
<td>Tuesday</td>
<td>Reading Day</td>
</tr>
<tr>
<td>April 28</td>
<td>Wednesday</td>
<td>Exams begin</td>
</tr>
<tr>
<td>May 5</td>
<td>Wednesday</td>
<td>Exams end</td>
</tr>
<tr>
<td>May 7, 8</td>
<td>Friday, Saturday</td>
<td>Commencement Exercises</td>
</tr>
<tr>
<td>May 8</td>
<td>Saturday</td>
<td>Degree Conferral Date*</td>
</tr>
</tbody>
</table>

* Degrees may be conferred on additional dates during the semester pending completion of all degree requirements.

#### Summer Term 2021

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 11</td>
<td>Tuesday</td>
<td>Maymester begins</td>
</tr>
<tr>
<td>May 17</td>
<td>Monday</td>
<td>Session 1 and 3 classes begin</td>
</tr>
<tr>
<td>May 28</td>
<td>Friday</td>
<td>Maymester ends (including exams)</td>
</tr>
<tr>
<td>May 31</td>
<td>Monday</td>
<td>Holiday - no classes held</td>
</tr>
<tr>
<td>June 26</td>
<td>Saturday</td>
<td>Session 1 classes end (including exams)</td>
</tr>
<tr>
<td>June 28</td>
<td>Monday</td>
<td>Session 2 classes begin</td>
</tr>
</tbody>
</table>
### Fall Semester 2021-22

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 28</td>
<td>Saturday</td>
<td>Classes begin</td>
</tr>
<tr>
<td>September 6</td>
<td>Monday</td>
<td>Labor Day Holiday</td>
</tr>
<tr>
<td>October 9-12</td>
<td>Sat-Tues</td>
<td>Fall Holiday</td>
</tr>
<tr>
<td>November 9</td>
<td>Tuesday</td>
<td>Last day to withdraw from classes</td>
</tr>
<tr>
<td>Nov 24-28</td>
<td>Wed-Sun</td>
<td>Thanksgiving Holiday</td>
</tr>
<tr>
<td>December 10</td>
<td>Friday</td>
<td>Classes end</td>
</tr>
<tr>
<td>December 11</td>
<td>Saturday</td>
<td>Exams begin</td>
</tr>
<tr>
<td>December 17</td>
<td>Friday</td>
<td>Exams end</td>
</tr>
<tr>
<td>December 18</td>
<td>Saturday</td>
<td>Commencement</td>
</tr>
<tr>
<td>December 18</td>
<td>Saturday</td>
<td>Degree Conferral date*</td>
</tr>
</tbody>
</table>

* Degrees may be conferred on additional dates during the semester pending completion of all degree requirements.

### Winter Term 2021-22

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 20</td>
<td>Monday</td>
<td>Classes begin</td>
</tr>
<tr>
<td>December 25</td>
<td>Saturday</td>
<td>Holiday</td>
</tr>
<tr>
<td>January 1</td>
<td>Saturday</td>
<td>Holiday</td>
</tr>
<tr>
<td>January 7</td>
<td>Friday</td>
<td>Classes end</td>
</tr>
</tbody>
</table>

### Spring Semester 2021-22

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 8</td>
<td>Saturday</td>
<td>Classes begin</td>
</tr>
<tr>
<td>January 15-17</td>
<td>Sat-Mon</td>
<td>Martin Luther King, Jr. Holiday</td>
</tr>
<tr>
<td>March 7-12</td>
<td>Mon-Sat</td>
<td>Spring Holiday</td>
</tr>
<tr>
<td>March 29</td>
<td>Tuesday</td>
<td>Last day to withdraw from classes</td>
</tr>
<tr>
<td>April 25</td>
<td>Monday</td>
<td>Classes end</td>
</tr>
<tr>
<td>April 26</td>
<td>Tuesday</td>
<td>Reading Day</td>
</tr>
<tr>
<td>April 27</td>
<td>Wednesday</td>
<td>Exams begin</td>
</tr>
<tr>
<td>May 4</td>
<td>Wednesday</td>
<td>Exams end</td>
</tr>
<tr>
<td>May 6, 7</td>
<td>Friday, Saturday</td>
<td>Commencement Exercises</td>
</tr>
<tr>
<td>May 7</td>
<td>Saturday</td>
<td>Degree Conferral Date*</td>
</tr>
</tbody>
</table>

* Degrees may be conferred on additional dates during the semester pending completion of all degree requirements.

### Summer Term 2022

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 10</td>
<td>Tuesday</td>
<td>Maymester begins</td>
</tr>
<tr>
<td>May 16</td>
<td>Monday</td>
<td>Session 1 and 3 classes begin</td>
</tr>
<tr>
<td>May 27</td>
<td>Friday</td>
<td>Maymester ends (including exams)</td>
</tr>
<tr>
<td>May 30</td>
<td>Monday</td>
<td>Holiday - no classes held</td>
</tr>
</tbody>
</table>

* Degrees may be conferred on additional dates during the semester pending completion of all degree requirements.
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 and Professional Studies, 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 98 baccalaureate programs, 43 master’s programs, two education specialist programs and 22 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 from the rich tapestry of backgrounds, cultures and ages represented here. Our students hail from all 50 states and 106 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.

Almost 20,000 undergraduates and more than 4,800 graduate students comprise the Old Dominion student body. Residence halls and apartments on campus house more than 4,800 students, while many other students live nearby within walking distance of the campus. Many ODU students are distance learners located throughout Virginia, the nation and the world. These students receive the same quality education but rarely, if ever, set foot on campus. Technology enables students, many of whom are connected to the military, to complete various ODU programs.

Students in search of extracurricular activities don’t have far to look. The University boasts more than 350 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 85th anniversary in 2015 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 3 million titles, state-of-the-art laboratories in the sciences and engineering, the E.V. Williams Engineering and Computational Sciences Building, and the new Engineering Systems 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, Gornto Hall and the Diehn Fine and Performing Arts Center. The most recent additions are a new building to house the Darden College of Education and Professional Studies, the Kate and John R. Broderick Dining Commons and the Barry Art Museum. 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 Bioelectrics 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 James A. Hixon Art Studio Building and Annex. Together they 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. Brock Commons, an outdoor amphitheater, provides a performance venue in the University Village. The new Barry Art Museum, with collections featuring glass art, paintings, dolls and automata, and drawings and prints, serves as an educational resource for the University and surrounding communities.

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 850 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 33 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, which provides a global dimension to the internship programs facilitated through Career Development Services
- The Office of International Programs, a comprehensive support office that facilitates continued global exploration and innovation

For more information visit http://odu.edu/intlprogs.

Outside the Classroom
Clubs and organizations for nearly every interest—more than 350 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 constituencies 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.

College of Arts and Letters
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.

Strome College of Business
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.

Darden College of Education and Professional Studies
The undergraduate park, recreation and tourism studies program is accredited by the Council on Accreditation of Parks, Recreation, Tourism and Related Professions (COAPT). 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 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 undergraduate program in industrial technology is accredited by the Association of Technology, Management, and Applied Engineering (ATMAE). 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/CAS).

Teacher Education Programs
The teacher education unit in the Colleges of Arts and Letters, Education and Sciences is accredited by the Council for the Accreditation of Teacher Education (CAEP). The following programs are nationally recognized through their specialized professional associations and CAEP: applied linguistics - Teaching English as a Second Language, biology, chemistry, early childhood education, earth science, educational leadership, elementary education, English/language arts, foreign languages, library science, marketing education, mathematics, music, middle school education, physical education, physics, reading specialist, school counseling, social studies, special education, technology education, and theatre and dance. The graduate program in music education is accredited by the National Association of Schools of Music.

Batten College of Engineering and Technology
The baccalaureate degrees in civil engineering, computer engineering, electrical engineering, mechanical engineering, and modeling and simulation engineering are accredited by the Engineering Accreditation Commission 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 of ABET, http://www.abet.org/.

College of Health Sciences
The program in dental hygiene is accredited by the American Dental Association Commission on Dental Accreditation. The baccalaureate nursing program is accredited by the Commission on Collegiate Nursing Education.
and approved by the Virginia Board of Nursing. Graduate nursing programs 
(M.S.N. and D.N.P.) are accredited by the Commission on Collegiate 
Nursing Education. Specialty tracks in graduate nursing programs are 
approved by 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 track 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 program is accredited by the Commission on Accreditation 
of Allied Health Education Programs (CAAHEP). The health services 
administration track in the Bachelor of Health Sciences is certified by the 
Association of University Programs in Health Administration (AUPHA).

College of Sciences
The doctoral program in clinical psychology is accredited by the American 
Psychological Association. The doctoral program in psychology (human 
factors) is accredited by the Human Factors and Ergonomics Society.

Affiliations
The University is a member of the Southern Association of Colleges and 
Schools, the American Council on Education, 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 Council for the 
Advancement and Support of Education, the Southeastern University 
Research Association, the American Association of University Women, 
the University Extension Association, the Universities Space Research 
Association, the American Association of Collegiate Schools of Business, 
the National Council for Accreditation of Teacher Education, the 
Association for Continuing Higher Education, the North American 
Association for Summer Sessions, the Association of Virginia Colleges, 
the Association of Schools of Allied Health Professions, the American 
Society for Engineering Education, the Consortium for Oceanographic 
Research and Education, the Conference of Southern Graduate Schools, and 
the Council for Standards in Human Services Education. The University is 
also a Division I member of the National Collegiate Athletic Association 
(NCAA) and Conference USA (C-USA).

The Master of Engineering Management program is certified by 
the American Society for Engineering Management (ASEM). The 
undergraduate program in chemistry is American Chemical Society certified.

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.
Interim Suspension
The chief student affairs officer, or designee, may suspend a student from the University for an interim period pending disciplinary or criminal proceedings, or medical evaluation. The interim suspension shall become immediately effective without prior notice whenever there is evidence that in the opinion of the chief student affairs officer the continued presence of the student at the University poses a substantial and immediate threat to him/herself or to others, or to the stability and continuance of normal University functions.

A student suspended on an interim basis shall be given a prompt opportunity to appear personally before the chief student affairs officer or a designee in order to discuss the following issues:

1. the reliability of the information concerning the student’s conduct, including the matter of his or her identity;
2. whether the conduct and surrounding circumstances reasonably indicate that the continued presence of the student on University premises poses a substantial and immediate threat to him/herself or to others or the stability and continuance of normal University functions.

The suspended student shall be able to appeal the decision to the president, or the designee. The decision of the president, or designee, shall be final.

The chief student affairs officer and/or president, or designees, may impose conditions to re-admittance to the University as the conditions warrant.

-Approved by the president
April 30, 2009

Posthumous Degree or Certificate of Recognition or Achievement for Terminally Ill and Deceased Students

http://www.odu.edu/content/dam/odu/offices/bov/policies/1400/bov1408.pdf
d. A detailed description of attempts at informal resolution with the faculty member and Chair

e. A detailed description of the relief sought

C. STEP 3 - Investigation

The Chair may designate a faculty member to investigate the complaint. If the Chair is the subject of the complaint, the student shall contact the academic Dean who will designate a faculty member to investigate the complaint. The person investigating the complaint will meet, either independently or collectively, with the student and the person who is the subject of the complaint within 10 business days from the filing of the complaint. The decision should be issued in writing to the student and the faculty member within 20 business days of the date the complaint is filed.

The complaint process is not intended to be an adversarial hearing and both the interviews of the student and the faculty member will usually be conducted without the other present.

D. STEP 4 - Appeal Procedure

If the student is not satisfied with the resolution in Step 3, the student may file a formal appeal with the appropriate academic Dean. The appeal must be filed within five business days after the decision in Step 3 has been sent. The Dean has the discretion to accept a complaint filed after this deadline for good cause.

The appeal must be in writing and contain:

1. The student’s name and University Identification Number
2. The faculty member’s name and the course subject area prefix and number
3. A detailed description of the nature of the complaint
4. A detailed description of attempts at resolution with the faculty member and Chair or Program Director
5. A detailed description of the relief sought
6. A copy of the Chair’s (or Program Director’s) finding and supporting documents. (No new information is permitted.)

1. The Dean shall provide the faculty member and Chair or Program Director a copy of the appeal.
2. The Dean may consider the appeal or appoint a faculty member to consider the appeal. The person appointed shall not have been involved as a decision maker in Steps 1-3 above.
3. The person considering the appeal shall review the materials and issue the finding within 30 business days from the date the appeal is filed. The review of materials will generally occur outside the presence of the complainant and respondent, and it will be limited to a review of the record. The person considering the appeal may interview any person, such as the original decision-maker, as needed.
4. The person making the decision shall first determine whether the conduct in question is protected by academic freedom and whether the student’s complaint is best addressed by this process.
5. At the end of the review, a written decision will be issued. A copy of the decision will be sent to the complaining student, the faculty member, and the Chair or Program Director.
6. The decision by the designee of the Dean is final.

-Approved by the president
May 13, 2011

Veterans Grievance Policy

The Virginia State Approving Agency (SAA), is the approving authority of education and training programs for Virginia. Our office investigates complaints of GI Bill beneficiaries. While most complaints should initially follow the school grievance policy, if the situation cannot be resolved at the school, the beneficiary should contact our office via email saa@dvs.virginia.gov.

Student Record Policy

https://www.odu.edu/about/policiesandprocedures/university/4000/4100

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.

Old Dominion University Notice of Non-Discrimination

Old Dominion University does not discriminate in admissions, treatment, employment or access to its programs or activities on the basis of race, color, religion, national or ethnic origin, age, sex (including pregnancy), political affiliation, veteran status, family medical and genetic information, sexual orientation, gender identity, gender expression, or disability, as required by The Civil Rights Act of 1964; The Americans with Disabilities Act of 1990, as amended; The Age Discrimination Act of 1975; Title IX of the Education Amendments of 1972; Section 504 of the Rehabilitation Act of 1973; the Virginia Human Rights Act; the Governor’s Executive Order Number One (2014); and other state or federal laws and university policies https://www.odu.edu/content/dam/odu/policies/university/1000/univ-1005.pdf. ODU prohibits sexual and sex-/gender-based misconduct, discrimination, harassment and interpersonal violence, including sexual assault. ODU also prohibits discrimination against employees or applicants because they have inquired about, discussed or disclosed their own pay or the pay of another employee or applicant.

As an affirmative action and equal opportunity employer, ODU promotes the full realization of employment opportunity for all persons, including minorities, women, individuals with disabilities and veterans. ODU bases all employment decisions only on job requirements. These efforts apply to all employment actions, including but not limited to recruitment, selection, hiring, promotion and compensation.

Any member of the ODU community has the right to raise concerns or file a complaint regarding discrimination without fear of retaliation. Any and all inquiries regarding the application of this statement and related policies may be referred to: ReNeé S. Dunman, Esq. Assistant Vice President for Equity and Diversity, Institutional Equity and Diversity, Innovation Research Park I, 4111 Monarch Way, Suite 103, Old Dominion University, Norfolk, VA 23529, (757) 683-3141, rdunman@odu.edu.

The University’s designated Title IX Coordinator is Courtney Kelly and Section 504/ADA Coordinator is ReNeé S. Dunman, Institutional Equity and Diversity, Innovation Research Park I, 4111 Monarch Way, Suite 103, Old Dominion University, Norfolk, VA 23529, (757) 683-3141, cmkelly@odu.edu. (cmkelly@odu.edu)

Title IX Coordinator

Courtney Kelly

4111 Monarch Way Ste. 103
Norfolk, VA 23529
757-683-3141
cmkelly@odu.edu
Deputy Title IX Coordinators
Athletics, To Be Named
Associate AD for Student-Athlete Services/SWA
Sport Supervisor/Deputy Title IX Coordinator
4500 Parker Ave. RM 1105A
Norfolk, VA 23529
757-683-6936
rhill@odu.edu

Equity and Diversity, Kimberly Cain
Assistant Director for Equity and Diversity
4111 Monarch Way Ste. 103
Norfolk, VA 23529
757-683-3141
kcain@odu.edu

Sport Supervisor/Deputy Title IX Coordinator
4500 Parker Ave. RM 1105A
Norfolk, VA 23529
757-683-6936
rhill@odu.edu

Title IX Liaisons
SEES, Traci Daniels
Advisor and Special Assistant to the Vice President
Student Engagement & Enrollment Services
Old Dominion University
Norfolk, VA 23529
1029 Koch Hall
Phone (757) 683-5890

Academic Affairs, Dr. Brian Payne
Vice Provost for Academic Affairs
2116B Monarch Hall
Norfolk, VA 23529
757-683-4757
bpayne@odu.edu

Human Resources, JaRenae Whitehead
Director of Human Resources for Employee Relations & Strategic Initiatives
1502 Spong Hall
Norfolk, VA 23529
757-683-4564
jwhitehe@odu.edu


Title IX Nondiscrimination Statement
As part of its commitment to providing an educational environment free from discrimination, Old Dominion University complies with Title IX of the Education Amendments, which prohibits discrimination and harassment based on sex in an institution’s education programs and activities. Title IX prohibits sexual harassment, including sexual violence, of students at Old Dominion University-sponsored activities and programs whether occurring on-campus or off-campus. Title IX also protects employees from sexual harassment and discrimination. Prohibited harassment includes acts of verbal, nonverbal or physical aggression, intimidation or hostility based on sex, even if those acts do not involve conduct of a sexual nature; sex-based harassment by those of the same sex; and discriminatory sex stereotyping. Old Dominion University will take prompt action to investigate and resolve reports of sexual harassment or sexual violence in accordance with Title IX. Old Dominion University’s Title IX coordinator is Courtney Kelly, Innovation Research Park I, 4111 Monarch Way, Suite 103, Norfolk, VA 23529, cmkelly@odu.edu. Retaliation against any person who initiates an inquiry or complaint or participates in the investigation of a complaint is prohibited. Such conduct will be further cause for disciplinary action.
Student Resources and Services

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 degree planning 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 degree planning 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 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/aosuccesscenter/graduation/candidates/advisors.shtml)

The executive director of the Center for Advising Administration and Academic Partnerships 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://www.odu.edu/success/academic/majorexploration), and the director of advising services for distance learning, in coordination with Career Development Services (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 (https://www.odu.edu/success/academic/majorexploration) during the initial term of enrollment, or to a Student Success Advisor for distance learning students. 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 required 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/success/academic/majorexploration) (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, and any off-campus students in online programs should consult with their ODU Online Student Success Advisor for advising purposes.

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 concentrations 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 Student Success Center (http://www.odu.edu/aosuccesscenter) 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 the online transfer orientation. Students who are undecided on a program of study using the Degree Works system, the Student Success Center (http://www.odu.edu/aosuccesscenter) 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 the online transfer orientation. Students who are undecided on a program of study using the Degree Works system, the Student Success Center (http://www.odu.edu/aosuccesscenter) offers individual and group tutorials on how to use the system and create a long range degree plan.

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 Student Success Center (http://www.odu.edu/aosuccesscenter).

UNIV Coursework

Academic success programs are available for all freshmen, sophomores, and transfer students who end their first semester in academic warning. All freshmen and sophomore students are required to participate in an academic success program, sponsored by the Student Success Center, in accordance with the Undergraduate Continuance Policy (http://www.odu.edu/continuance).

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 and co-curricular opportunities that provide the experiences needed to accomplish their academic and career 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 and other University-provided technologies.

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 Development...
GOAL 7. Keep current on University policies and procedures by participating in on-going education opportunities related to advising and student success.

**Student Goals and Learning Outcomes in the Academic Advising Process:**

GOAL 1. To develop an education and career plan, in consultation with the advisor, that promotes academic success by exploring options through courses and other educational and co-curricular experiences.

GOAL 2. 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 3. To be engaged in the course selection process and to actively seek and participate in other educational and co-curricular 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 use University-provided technologies and be responsible for new information provided through on-line resources.

GOAL 6. Be prepared with accurate information and relevant materials when contacting the academic advisor.

GOAL 7. 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**

The 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/testing-center.

**Writing Placement**. All undergraduate students who have not earned credit for ENGL 110C through dual enrollment, Advanced Placement (AP), the College Level Examination Program (CLEP) or transfer from another institution are required to earn a passing score on the Writing Sample Placement Test (WSPT).

Transfer students with credit for ENGL 110C are exempt from taking the WSPT. Transfer students are eligible to take the WSPT as a diagnostic tool by contacting the Writing for College Success Program at wst@odu.edu.

**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 a math placement test at the University Testing Center. Students challenging their placement may take the math placement test up to the University add/drop deadline.

**Foreign Language**. 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 World Languages and Cultures Department to obtain a waiver of the 200-400 level courses.

**Exemptions**

**Written Communication**. 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

**Portfolio Waiver Option for ENGL 110C and ENGL 211C/ENGL 221C/ENGL 231C**

ENGL 110C Portfolio Waiver Option. Students who have credit for ENGL 211C/ENGL 221C/ENGL 231C or equivalent but not ENGL 110C can provide a portfolio of their writing to determine if it is equivalent to the writing required in ENGL 110C. Students will be asked to provide samples of their writing, for example, from ENGL 2**C, a W course, or a different course. The portfolio of writing samples is submitted to the Department of English. If it is determined that the writing is equivalent to or exceeds the writing required in ENGL 110C, the student will be exempt from the ENGL 110C requirement. There would be no cost and no award of credit.

ENGL 211C/ENGL 221C/ENGL 231C Portfolio Waiver Option. In certain extenuating circumstances, the English Department may approve a waiver of the ENGL 2**C requirement. Students will be asked to provide a portfolio of student writing to determine if it is equivalent to the writing required in ENGL 2**C. Students may provide samples of their writing, for example, from their W course or a different course, but not writing from ENGL 110C. The portfolio of writing samples is submitted to the Department of English. If it is determined that the writing is equivalent to or exceeds the writing required in ENGL 2**C, the student will be exempt from the ENGL 2**C requirement. There would be no cost and no award of credit.

**Mathematics**. Students with superior scores on the math placement 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.

**Foreign Language**. 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 World Languages and Cultures 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/testing-center.
Transfer Student Centers

Old Dominion University recognizes the unique needs of transfer students who require a wide array of campus resources. The Center for Advising Administration and Academic Partnerships’ Transfer Initiatives unit and the three ODU Higher Education Centers assist 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 - Let us help you finish what you started!

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 Student Centers website (http://www.odu.edu/newtransfer/advising). The Center for Advising Administration and Academic Partnerships 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 transfer pathways 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 Transfer Initiatives office is responsible for the development of these transfer pathways agreements with two-year institutions, primarily within Virginia. Additionally, such agreements are developed with institutions in other states and countries through the Office of Academic Affairs. The Transfer Initiatives 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 Student Centers website (http://www.odu.edu/newtransfer/advising).

Career Development Services

Career Development Services (CDS) offers services to assist all ODU undergraduate and graduate students as well as alumni with career decision making, internal assessment and external exploration, reflection, and career readiness skills. Teaching career readiness skills and an educational developmental philosophy are keys to students’ success as well as internships, networking, active career research, timely intentional involvement in each stage of career development, and meaningful student employment and internship engagement. A range of comprehensive services includes individual career counseling, career fairs, student employment, on-campus interviews, career classes, internship support, assisting in maximizing career outcomes, workshops, outreach, in-class presentations, web content, and more. CDS has received national recognition for select programs, and staff members provide national and regional leadership in the field. CDS has a main center as well as college-based services.

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. Freshmen may qualify for the Learn and Earn Advantage Program (LEAP.) Career Development Services lists jobs of all types, including permanent full-time positions, through ODU Careers4Monarchs. This powerful interactive web-based system is available free to students and alumni of Old Dominion University. The ODU Careers4Monarchs database contains employer information, career information, a career event calendar and interview schedules, as well as the means to electronically apply for positions posted. Careers4Monarchs is the primary tool used by Career Development Services 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 CDS staff member assigned to offer career development services to students at all levels. CDS maintains full-service college-based services in the Colleges of Arts and Letters, Business, Education, Engineering and Technology, and Sciences, which house the CDS Liaison to that college. CDS services are also available to students at the Virginia Beach, Tri-Cities and Peninsula Higher Education 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 online 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 career fairs are held twice a year and are supplemented by specialized fairs for specific populations, including a teacher fair, a graduate recruitment fair, co-op/intern fair and a summer job fair. Students may also take advantage of the On-campus Recruiting Program, which provides the opportunity to interview, on campus, with employers for internships, cooperative education, and entry-level positions.

Many of the programs and services available on campus are also offered online and via video streaming through the CDS website, ODU Careers4Monarchs, and the Career Commons. CDS has developed this exciting opportunity as part of the anytime, anyplace virtual career center model for students and alumni who prefer or require assistance from a career professional through electronic means. The Career Commons allows CDS 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 CDS for this initiative with the Chevron Corporation Award.

More information is available by calling the CDS main office at 757-683-4388 during normal office hours, via email at cds@odu.edu, or virtually via the internet at http://www.odu.edu/cds. Staff members are also available in offices in the colleges or the main CDS office in Webb Center North, Suite 2202.

Center for High Impact Practices

The Center for High Impact Practices in the Student Success Center supports academic success in the classroom and beyond through student-centered programs, resources, and high impact educational activities. The Center aims to collaborate with campus and educational partners to identify student learning needs, foster successful student learning experiences, and support faculty as they implement high impact practices. The Center also advocates for the support and expansion of educational experiences that enhance students’ success in college.

Program and focus areas include:

- Academic Initiatives: LeADERS, Learning Communities, Open Educational Resources
- Academic Readiness and Enrichment Opportunities and the University’s Tutoring Taskforce
- ePortfolio & Digital Initiatives
- Integrative Learning Initiatives
- TRiO: Student Support Services
- TRiO: Upward Bound
Services include:

- Promotion of and support for high impact educational experiences
- Peer academic coaching and college readiness experiences
- Academic skills resources and workshops (writing, reading, organization, tutoring, etc.)
- General advising
- Assistance for financially-eligible and first-generation college students
- ePortfolio workshops for faculty and ePortfolio support for students
- Integrative learning opportunities and workshops for faculty

For information about additional resources offered, call 757-683-3699 or visit http://odu.edu/chip.

Center for Major Exploration (CME) and Mane Connect Success Coaching (MC)

The primary purpose of the Center for Major Exploration (CME) and Mane Connect Success Coaching (MC) 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 coaching appointments, individual advising, and major and career exploration. The advising and coaching staff put an emphasis on assisting students with developing and enhancing their decision making and critical thinking skills, along with identifying and realizing academic and career goals in relation to their major. CME/MC 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/MC staff work collaboratively with other partners across campus to offer additional programs and services throughout the year that address a variety of topics related to the college transition, academic success, and choosing a major. CME/MC advisors also provide information for students regarding academic policies and procedures, as well as information about resources available at the University. Students will continue to work with the Center for Major Exploration until they have chosen a major, at which point they will be referred to the appropriate major advisor.

The Center for Major Exploration and Mane Connect Success Coaching 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 https://www.odu.edu/sees/mane-connect (https://www.odu.edu/sees/mane-connect).

Counseling Services

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 regarding students’ mental health are also available to currently enrolled students, faculty, staff, and student organizations.

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

Division of Student Engagement & 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), Institutional Research, Customer Relations Center, the Registrar, Dean of Students, Educational Accessibility, Military Connection Center, Assessment/Planning, Budget Management, Career Development Services, Center for Major Exploration & Mane Connect Success Coaching, Counseling Services, Divisional IT Support, Financial Aid, Housing and Residence Life, Intercultural Relations, Recreation and Wellness, Leadership and Student Involvement, Student Conduct and Academic Integrity, Student Health Center, Student Outreach & Support, Student Transition and Family Programs, Women’s Center, Governmental Relations, and Strategic Communication & Marketing.

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 found 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, Norfolk, VA 23529.

The ADA Coordinator, who is also Assistant Vice President for Institutional Equity and Diversity, is located at Innovation Research Park I, 4111 Monarch Way, Suite 103, Norfolk, VA 23508 and can be reached at (757) 683-3141.

Housing and Residence Life

Living on campus provides students opportunities to build life-long friendships, engage in academic pursuits, and develop a sense of community. Housing & Residence Life (HRL) 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 students’ academic and personal lives.

Living on campus provides students opportunities to be active members of their community. Socializing with friends, dining in the halls, and taking advantage of academic support services are just a few of the many benefits of living on campus. Whether living in a residence hall or apartment style community, students can experience university life to its fullest as residents. Students will spend a significant amount of time in their living environment, and HRL staff want students to feel as if their residence hall or on-campus apartment is their “home away from home.” HRL staff are committed to providing a premier living learning community where students can be successful in and outside of the classroom.

HRL staff provide a learner-centered environment conducive to students’ academic success through intentional Living-Learning Communities (LLCs). LLCs offer students the opportunity to live and engage with other students that have similar academic and co-curricular interests. Living in an LLC uniquely connects students to the ODU community while achieving student success.

Engaging in HRL community experiences during the first eight weeks of the semester can have long-term positive benefits. Remaining fully engaged in academic pursuits, campus life, and service learning will maximize students' time as an ODU Monarch Citizen. Serving in a leadership capacity will give students an opportunity to help shape their involvement while at ODU. Student leaders living in the residence halls are responsible for coordinating dynamic community experiences that further enhance the collegiate journey.
Living on campus at ODU can provide endless possibilities for students who have the desire and want to become global citizens.

For further information about living options on campus, please visit the HRL website at: http://www.odu.edu/life/housing, contact Housing & Residence Life at (757) 683-4283 or email housing@odu.edu. 4603 Elkhorn Ave., Suite 1208, Norfolk, VA 23529

Off-Campus Housing
The Off-Campus Student Life Office was created to provide a centralized location for off-campus students to receive guidance, support, and resources for their off-campus experience.

The Off-Campus Student Life Office connects students to several resources, including:

- Easily navigable web page with property listings from local landlords
- Off-Campus Housing Fair
- Assistance with finding off-campus roommates, including regular roommate pairs
- Programming about renters' rights and responsibilities and off-campus behavior
- City of Norfolk tenant resources, including assistance with resolving issues with landlords
- FREE safety alarms and light bulbs

In addition to providing resources to students, office staff also strive to work collaboratively with the neighborhoods surrounding Old Dominion University and the City of Norfolk on livability issues affecting students and long-term residents.

For additional information about Off-Campus Student Life, please visit the website at https://www.odu.edu/life/offcampus or contact the Off-Campus Student Life Office at 757.683.4187. The office is located at 1105 Webb Center, Norfolk, VA 23529.

Office of Intercultural Relations (OIR)
The Intercultural Center
The Intercultural Center, located at 1200 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. Students are welcome to visit or have a group study session. The Intercultural Center is not only a study or work location for off-campus students to receive guidance, support, and resources for their off-campus experience.

The Intercultural Center

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

International Initiatives Unit
As a citizen of a global community, it is imperative that individuals have the knowledge, awareness, and 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. The International Initiatives Unit promotes campus internationalization and global learning through cultural events and educational programs as well as training, workshops and presentations on topics related to global, intercultural and international education.

Through international student initiatives, OIR collaborates with the student community and offices/departments across campus to host program initiatives to welcome, orient, and enhance a sense of belonging, engagement, and success of international students. Examples of the international student initiatives include the International Student Advisory Board, Arrival Assistance, International Student Welcome Reception, International Celebration, and many other opportunities. Through global learning and engagement programs, OIR provides an array of initiatives to enrich and enhance global competency for ODU community members such as International Education Week, global mentorship programs through the Global Monarch Club, Global Café, and various cultural celebrations throughout the academic year. These programs, workshops, activities, and events are designed so that participants will be informed, educated, and prepared for successful integration into today’s interconnected global society. For more information, visit the International Initiatives website at http://odu.edu/oir/international-initiatives.html.html.html.

Intercultural Initiatives Unit
The vast diversity within our country weaves a rich fabric of unique traditions, beliefs, and values. The intercultural initiatives unit provides a platform for exploration and education of our unique cultures and celebration of an inclusive community. Whether it is programs within Hispanic Heritage Month, Black History Month, Native American Month, Asian American Seasons, Interfaith Dialogues, and LGBTQ Heritage, each is a cultural expression that educates the campus and Hampton Roads about the diversity within our multicultural communities. Other initiatives include Unity Fest; Cultural Explosion; Symposia for Black and Hispanic students; Sankofa and Adelante dinners that bring together students, faculty, administrators, and alumni; interfaith and current issues forums; and affinity advisory student groups, which provide Monarchs opportunities to engage across cultures. 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. For more information, visit the Intercultural Initiatives website at http://ww2.odu.edu/oir/intercultural-initiatives%20.html.html.

Social Justice & Equity Unit
The Social Justice & Equity unit consists of transformational initiatives that include 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.

LGBTQIA+ Initiatives Unit
The LGBTQIA+ initiatives unit provides leadership to fostering an affirming space for students in the Lesbian, Gay, Bisexual, Transgender, Queer, Intersexed, Asexual (LGBTQIA) and gender and sexual minority communities and allies. OIR provides learning opportunities for those who are interested in learning about the LGBTQIA+ community to raise awareness of the complexities of sexual orientation and gender identity. Committed to an environment that supports the visibility and sense of belonging for LGBTQIA+ student populations, OIR creates educational initiatives designed to celebrate, educate, affirm, and recognize the diversity and intersectionality of identities within the LGBTQIA+ community including students of color, gender non-confirming, and non-binary. Additionally, OIR is committed to addressing heterosexism, cis supremacy, queerphobia, and other expressions of marginalization in order to promote a campus culture that includes a safe, equitable, and inclusive learning environment.

The Office of Intercultural Relations is located at 1200 Webb University Center. Please visit the website at http://www.odu.edu/oir; OIR is on Twitter, Facebook, Instagram, OrgSync, and Tumblr.

International Programs
Paul Currant, Senior International Officer
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 mobility 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.

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 mobility of students and faculty as well as collaborative research. OIP staff provide advising support for international fellowships, such as the Fulbright and 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 Office of Visa and Immigration Service Advising (VISA), and the English Language Center.

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 ODU students in more than 70 countries. 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 additional financial support for students who are studying abroad during their ODU career.

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 and scholarships. 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 website at www.odu.edu/studyabroad.

Visa & Immigration Service Advising (VISA)
The Old Dominion University community includes more than 700 international students and 75 visiting scholars from 80 foreign countries. Serving the immigration advising and personal needs of these individuals is the main mission of Visa & Immigration Service Advising (VISA). The office provides administrative support and documentation services along with resource and regulatory advising that assist international students and scholars in successfully achieving their academic and research goals. VISA also works closely with academic departments and administrative offices and helps to educate them on regulatory requirements. Additionally, VISA offers to all university staff the Global Certificate Program, a series of workshops that help in building awareness of the international community’s needs, as well as to develop and strengthen skills in intercultural communication. VISA administers the International Student Leadership Award, which provides tuition support for undergraduate international students who demonstrate leadership and community involvement. Visit the VISA website at https://www.odu.edu/visa.

English Language Center
The English Language Center (ELC) provides effective, quality instruction of English for non-native speakers. Students will improve their English language skills, gain confidence, develop critical reasoning skills, learn about American culture, and prepare for university-level courses. The ELC’s rigorous full-time Intensive English Program is designed for students who want to develop the academic English proficiency necessary to succeed in ODU’s undergraduate and graduate programs. The ELC offers six seven-week sessions each year with program start dates in January, March, May, June, August, and October. Each week, full-time students spend at least 20 hours in class studying grammar, listening/speaking, reading/vocabulary, and writing. Part-time learning opportunities are also available.

Conditionally admitted students can join the ELC’s Monarch English Transition Program (formerly known as the Bridge Program). The Undergraduate and Graduate Monarch English Transition (MET) Programs combine two English language support courses with one to two courses in the student’s academic field. Conditionally admitted students may enter the MET by successfully meeting the level 5 exit requirements of the ELC’s Intensive English Program or by scoring a 500 on the TOEFL ITP, 61 on the TOEFL IBT, or 5.5 on the IELTS. Successful completion of the semester-long MET Program satisfies the University’s English proficiency requirement. Students in the Undergraduate MET Program have the option to enroll in the language support courses for academic credit.

The ELC administers the institutional TOEFL and SPEAK exams several times a year. TOEFL and GRE preparation courses are also available. For more information, please visit the ELC website at www.odu.edu/esl and contact the ELC (ELC@ODU.EDU, 757-683-4424). Admission and subsequent enrollment in ELC courses do not imply admission to the ODU academic programs.

LeADERS
Leadership | ePortfolio | Academic Internship | Diversity | Entrepreneurship | Research | Service Learning
LeADERS builds a pathway for students to engage with high impact learning activities, reflect on and make connections between those experiences, and showcase learning for multiple audiences. LeADERS prepares students for careers, graduate school, life-long learning, and global citizenship through hands-on learning experiences.

Students can earn a bronze, silver, or gold medal by completing LeADERS-designated courses or experiences from three, four, or five areas of LeADERS. Students will develop an ePortfolio showing how these courses connect to one another and to real-world experiences.

All undergraduate ODU students are invited to submit an interest form to become a LeADERS candidate. For more information and a list of LeADERS-designated courses, visit the website at https://www.odu.edu/success/programs/leaders.

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 seven colleges. Courses are available on campus and online in live, synchronous, and anytime, asynchronous formats. Students can take classes worldwide through ODU (https://online.odu.edu/Online (https://online.odu.edu) with a computer and internet connectivity. ODU/Online staff facilitate pre-admissions coaching, admissions, registration, and advising through programmatically-focused coaching and advising services. Old Dominion also operates extended campuses on or near military installations in and outside Virginia, where students can meet with staff and use the on-site resources.

A Military Tuition Rate of $250.00 per credit hour is available for eligible undergraduate active duty military personnel enrolled in degree or non-degree seeking, for-credit courses offered on campus or online. More information is available on the University's Current Tuition Rates (https://www.odu.edu/tuition-aid/costs-tuition/tuition) webpage.

Old Dominion University is a member of the GoArmyED network, the USAF’s Associate’s to Bachelor’s Cooperative (AUABC), and the Navy’s revised NCPACE and Navy College programs, all of which provide
substantial credit for military training as well as flexibility, convenience, and affordability. The University accepts tuition assistance and serves the special needs of veterans, on campus or at distance.

Military Connection Center
The Military Connection Center (MCC) is committed to assisting veterans, currently serving service members, reservists, guardsmen and their families to successfully navigate the transition to academic life. The goal is to provide comprehensive support for students to succeed at Old Dominion University from the point of admission through graduation and ultimately on to a productive career.

The MCC serves military affiliated students as hubs to connect prospective and current students with the answers they may be looking for on such topics as using GI Bill benefits, transferring in credit from military service, or looking for resources to help find a career. The Center is staffed by veterans and military family members who understand what it means to be in the military and will make sure students get the information or assistance they need. Several programs are offered to help make the transition easier, including a Military and Veterans Transition to ODU Program, a military-style Sponsorship Program, and a Mentorship Program. All military affiliated students will also be invited to join the Student Veteran Association to connect with others who have served, are still serving, or who lived in a military family.

The Military Connection Center is in Room 1106 of Monarch Hall. The Center can be reached by phone at 757-683-7153 or by email at military@odu.edu. Information for all military-affiliated students can be found at http://www.odu.edu/military.

VetSuccess Counselor
The VetSuccess on Campus Program is a partnership between the U.S. Department of Veterans Affairs and ODU to assist military affiliated students in making a smooth transition to college life and successfully completing their educational programs. The VetSuccess on Campus Counselor will assist veterans, active duty service members, and eligible family members with: information on VA educational benefits, applying for and understanding VA benefits, career counseling and vocational exploration, and information and referrals for VA and community-based facilities. The VetSuccess counselor can be reached at 757-683-7114 and is in Room 1106 Monarch Hall.

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 student, 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, 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, Public Service Week, and Monarch Service Days.

Service-Learning
Service-learning provides students with integrative learning opportunities that connect the themes and theories of their coursework to tangible community-based work that enriches communities by addressing key community issues and needs in collaboration with diverse community partners. LSI provides resources and support for faculty interested in service-learning. In addition, there is a service-learning Living Learning Community available for students in Housing and Residence Life.

Student Organizations
There are over 350 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 on LSI’s website under student organizations.

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
LSI advises 20 international/national fraternities and 11 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. 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
• Alpha Kappa Alpha
• Iota Phi Theta
• Kappa Alpha Order
• Kappa Alpha Psi
• Kappa Delta Rho
• Kappa Sigma
• Lambda Upsilon Lambda
• Phi Beta Sigma
• Phi Delta Theta
• 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
- Omega Phi Beta
- Pi Beta Phi
- Sigma Lambda Upsilon
- Sigma Sigma Sigma
- Zeta Phi Beta
- Zeta Tau Alpha

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

Implementation of Major Programs and Events
LSI helps to plan and implement activities and events to enrich the lives of students. These include Involvement Fair, Homecoming, Student Engagement and Enrollment Services Leaders Award Ceremony, Week of Welcome, and Programs All Weekend (PAW).

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 or transfer students with fewer than 24 hours are required to participate in Preview. 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's tuition bill. For more information, see the website at www.odu.edu/preview.

At Preview, students meet with academic advisors to plan and register for summer/fall semester classes as well as receive an introduction to University resources and campus life. A program for families and guests is scheduled concurrently.

There is also a Preview scheduled in December and January for students enrolling in the spring semester. A program for families and guests is scheduled concurrently.

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, a swimming pool 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/recwell or contact the office at 757-683-3384.

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. Through interactions with students, staff hope to foster a climate of personal and academic integrity that facilitates the success of all University community members. 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.

The Code of Student Conduct applies to students. Students include all persons admitted to the University who have not completed a program of study for which they were enrolled; student status continues whether or not the University's programs are in session. Examples of violations heard under the Code include, but are not limited to, academic integrity, threats of harm, assault, and sexual violence (Title IX).

Title IX of the Education Amendments of 1972 prohibits discrimination based on sex in educational programs and activities. Sexual harassment and sexual violence 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 Courtney Kelly, Title IX Coordinator, located at Innovation Research Park I, 4111 Monarch Way, Suite 103; (757) 683-3141 or ckmelly@odu.edu.

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, Faxesimile (757) 683-5930.

Student Health Services provides primary outpatient health care for Old Dominion University students. These services include medical care for acute illness and minor injury, routine health care, preventive health care, family planning and laboratory testing. 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 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. For students starting in the fall, this information is due August 1 and for students starting in the spring, on January 2. 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 with a positive TB test are required to have a chest X-ray in a timely manner per Virginia Department of Health requirements.

All entering full-time Norfolk campus students are required to have their immunizations up to date. This includes Meningococcal quadrivalent vaccine and Hepatitis B vaccines or signed waiver on Part C of their health history form if the student declines these vaccines. In addition, Meningococcal B vaccine is recommended for those students at increased risk due to certain medical conditions or an outbreak of Meningococcal B disease. Men B vaccine may be administered to students age 16-23 for short-term protection (preferred age 16-18). Health history forms, Tuberculosis Risk Assessment and immunization documentation are due August 1 for fall semester and January 2 for spring semester. Students who do not submit the required health history/immunization documentation will
not be allowed to register for their 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.

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 website for information regarding health insurance at http://www.odu.edu/studenthealth.

Student Outreach and Support (SOS)
Student Outreach and Support (SOS) provides services to students who experience administrative, academic, or personal roadblocks. 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 Outreach and Support. 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 Outreach and Support is located in Suite 2008, second floor South Wing of Webb Center, and can be reached at (757) 683-3442. For more information please visit the SOS website at: https://www.odu.edu/life/support/student-outreach.

Student Success Center
A partnership between Academic Affairs 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, mentoring, and workshops
• 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 workshops for adoption of high impact practices
• 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 the Center for Advising Administration and Academic Partnerships, the Center for High Impact Practices, the Office of Educational Accessibility, Student Transition and Family Programs, and Writing and Faculty Development (QEP). Visit http://www.odu.edu/success/center 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 academic success, professional/social skills, 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.

Tutoring Services
Math Science Resource Center
The Math Science Resource Center (MSRC) provides extensive assistance to students in select Math and Chemistry courses in order to help them succeed in Math and Chemistry. The Tutoring, Supplemental Instruction and Review Sessions are free of charge and are offered throughout the week.

https://www.odu.edu/sci/msrc

Math and Stat Lab
The Math and Stat Lab in Dragas 2114 features help sessions available to all students enrolled in STAT 130M and the Calculus I-III (MATH 211, MATH 212, and MATH 312) courses.

https://www.odu.edu/math

Physics Learning Center
The Physics Learning Center is an additional resource designed to help students succeed in their Physics courses. The Learning Center provides a central location where students can work in cooperative groups and get assistance with physics homework from volunteer faculty members and graduate students.

https://www.odu.edu/physics/resources/learning-center

Writing Center
The Writing Center (Room 1307 of the Learning Commons in Perry Library) provides free individual tutorials to undergraduate and graduate students working on writing projects for any course; Writing Center tutors are not editors or proofreaders, but they coach and encourage students to achieve independence in the composition and revision of their own work.

https://www.odu.edu/al/centers/writing-center

Upward Bound Program
Upward Bound Program is a federally funded program whose goals are to motivate and provide academic assistance, advising and counseling services to eligible high school students enrolled in public high schools who show promise for success in education beyond high school. The program is offered in two phases.

(1) 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, and science. Career, educational, and personal counseling is also offered.

(2) Summer residential phase: a six-week simulated college experience where students live on campus and receive classroom instruction in core subject areas, computer applications, and social studies.

College tours and cultural enrichment activities are provided during both phases of the program. Students enrolled in Norfolk and Portsmouth public high schools who meet the U.S. Department of Education's eligibility guidelines qualify to participate. For more information, visit https://www.odu.edu/partnerships/community/programs/upwardbound.

University Libraries
The Old Dominion University Libraries enrich the academic, research, and learning experience of the University community through their people, resources, and spaces. The University Libraries provide students access to extensive digital resources, online journals, e-books, streaming media, and other electronic resources in all fields of research and instruction, in addition to the books, journals, scores, recordings, and more housed in three campus locations. The Libraries include the Patricia W. and J. Douglas Perry
Interlibrary loan allows ODU students, faculty, and staff to request borrowing. Information and reservations are available at the Perry Library Help Desk, located in the Learning Commons, which brings together the University’s scholarly, creative, and archival works. The Help 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.odu.edu/library/services/accessibility.

ODU Digital Commons and Digital Collections

ODU Digital Commons, which brings together the University’s scholarly, creative, and institutional works to preserve them, as well as provide open access to them online. Several digital collections of materials from the special collections and archives are also available, including the ODU Photographic Collection from 1930-early 2000s. Visit the ODU Digital Commons at digitalcommons.odu.edu.

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, Women’s 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. Students, faculty and staff may ask for the ODU Victim Advocate for crisis intervention, education, and advocacy.

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. Men are encouraged to get involved with the M-Power Peer Educator Program and the Men of Quality group.

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 violence have been recognized as a form of discrimination in violation of Title IX. For information, consultation or to file a complaint of discrimination or harassment on the basis of sex, individuals may contact the Title IX Coordinator, Courtney Kelly, located at 4111 Monarch Way, Suite 103 (Innovation Research Park I); she can be reached at (757) 683-3141 or cmkelly@odu.edu.
Admission to Old Dominion University

Web Site: http://www.odu.edu/admission

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, national or ethnic origin, age, sex (including pregnancy), political affiliation, veteran status, family medical and genetic information, sexual orientation, gender identity, gender expression, or disability. 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.

Programs available online and on-campus are subject to change. Please consult the application for admission for the specific semester for the most up-to-date information.

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
- Health Sciences
- Medical Laboratory Science
- Nuclear Medicine Technology
- Nursing

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.

Admission of Homeschool Graduates

Students who received secondary instruction at home are encouraged to apply using the regular admissions application by visiting http://www.odu.edu/apply. In addition to the application and $50 non-refundable fee, students should also submit a typed transcript outlining their curricula and grades awarded by the parent instructor, who should also sign the document attesting to its authenticity. Students who are not eligible for or who do not wish to be reviewed as a test-optional candidate for admission should also submit results from the SAT or ACT.

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.

Deposits for Admission

All new undergraduate applicants who wish to accept their offer of admission to the University are required to submit a non-refundable $200 admissions deposit. Under certain circumstances new undergraduate applicants may request to defer their admission up to one year. All deferment requests must be submitted in writing to the Office of Admissions.

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. Admission to the University does not imply admission to a specific degree program. Departmental approval may be required contingent on the course.

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 presenting a minimum composite score of 500. 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 Linked Undergraduate to Graduate Degree 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. Linked bachelor’s/master’s programs are also available in environmental health/community 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 linked bachelor/master programs in biochemistry, chemistry, computer science, and mathematics.

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


A linked 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. A linked B.A. or B.S./M.P.A. allows students to combine a Bachelor of Arts or Bachelor of Science with a master's degree in public administration. These programs are available in the Colleges of Arts and Letters, Education and Sciences.

The following linked bachelor/master programs are available in the College of Arts and Letters:

- Art history/humanities
- Communication/humanities
- Communication/lifespan and digital communication
- English
- English/applied linguistics
- Fine arts/humanities
- Geography/humanities
- History
- Interdisciplinary studies/humanities
- International studies
- Philosophy/humanities
- Studio art/humanities
- Women’s studies/humanities

Information on guaranteed entry and linked 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.

Old Dominion University
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.leoonline.odu.edu](https://www.leoonline.odu.edu). 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 appropriate 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 lower-division General Education requirements except those specified as major or college requirements and requirements for completion of the Undergraduate Writing Program.

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 of Applied Science (A.A.S.) degree from the Virginia Community College System that includes the required General Education courses have met all lower-division General Education requirements except those specified as major or college requirements and requirements for completion of the Undergraduate Writing Program.

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 Prior Learning Assessment 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

**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.
- Gifted High School Scholars – high school students taking college-level courses (permission is needed from the high school principal 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. 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. 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; new SAT Reading Test of 26 or 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 Old Dominion University’s English Language Center (ELC) Monarch English Transition Program (formerly the ELC 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; and b.) Securing a minimum grade point average of 2.50 in academic courses taken during the Monarch English Transition Program.

Undergraduate students who choose to satisfy English language proficiency requirements through the on-campus English Language Center will be placed according to the following criteria:

1. Students with a TOEFL iBT score below 61 (below 500 paper-based) are automatically eligible to enroll in the ELC’s Intensive English Program (IEP). Conditional admission to the university is available for most academic programs.

2. Students with a TOEFL iBT score between 61 - 78 (500 - 550 paper-based) will be placed in the Monarch English Transition Program, which includes both academic and semi-intensive English Language Center course work.

English Language Center - IEP students may enter the Monarch English Transition Program directly without TOEFL test scores after satisfying the following requirements: a.) Successful completion of level 5 in the IEP program with a ‘C’ grade or higher; and b.) Receive passing scores on level exit assessments. This option is only available to students that have progressively enrolled in the Intensive English Program.

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 World Languages and Cultures 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, and 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—2019-20 Academic Year*

<table>
<thead>
<tr>
<th>Housing Charges</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average room and board per year</td>
<td>$10,739</td>
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Applied Music Fees—2019-20 Academic Year*

<table>
<thead>
<tr>
<th>Applied Music</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Instruction (2 or 3 credits, one hour of instruction)</td>
<td>$250.00</td>
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<tr>
<td>Individual Instruction (1 credit, one-half hour of instruction)</td>
<td>$175.00</td>
</tr>
<tr>
<td>Group Instruction (class piano or voice)</td>
<td>$75.00</td>
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</table>

Course Fees—2019-20 Academic Year*

<table>
<thead>
<tr>
<th>Course</th>
<th>Fee</th>
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<tbody>
<tr>
<td>ARTS 202, ARTS 203, ARTS 211, ARTS 231, ARTS 279</td>
<td>$30</td>
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<tr>
<td>ARTS 241, ARTS 254, ARTS 257, ARTS 258, ARTS 259, ARTS 261, ARTS 263, ARTS 281, ARTS 291</td>
<td>$50</td>
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<tr>
<td>BIOL 111N, BIOL 118N, BIOL 122N, BIOL 124N, BIOL 137N, BIOL 139N</td>
<td>$20</td>
</tr>
<tr>
<td>BIOL 404, BIOL 420, BIOL 504, BIOL 520</td>
<td>$25</td>
</tr>
<tr>
<td>BIOL 103</td>
<td>$30</td>
</tr>
<tr>
<td>BIOL 250, BIOL 251</td>
<td>$35</td>
</tr>
<tr>
<td>BIOL 314</td>
<td>$40</td>
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<tr>
<td>BIOL 317</td>
<td>$45</td>
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<tr>
<td>CEE 335</td>
<td>$20</td>
</tr>
<tr>
<td>CET 345W</td>
<td>$30</td>
</tr>
<tr>
<td>CHEM 106N, CHEM 108N, CHEM 122N, CHEM 124N</td>
<td>$50</td>
</tr>
<tr>
<td>CHEM 212, CHEM 214, CHEM 322, CHEM 332W, CHEM 334W</td>
<td>$75</td>
</tr>
<tr>
<td>CHEM 442W, CHEM 542</td>
<td>$100</td>
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<tr>
<td>CS 120G, CS 121G</td>
<td>$30</td>
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<tr>
<td>CS 150</td>
<td>$40</td>
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<tr>
<td>CYTO 428W</td>
<td>$45</td>
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<tr>
<td>DNTH 303</td>
<td>$40</td>
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<tr>
<td>DNTH 301, DNTH 317</td>
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<tr>
<td>ECE 287, ECE 387</td>
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<tr>
<td>EET 125, EET 315, EET 325, EET 335</td>
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<tr>
<td>ENGN 110</td>
<td>$45</td>
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<tr>
<td>GDES 280</td>
<td>$30</td>
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<tr>
<td>GEOG 402, GEOG 404, GEOG 502, GEOG 504</td>
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<tr>
<td>MATH 211, MATH 212, MATH 312</td>
<td>$10</td>
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<tr>
<td>MAE 203, MAE 225, MAE 305</td>
<td>$25</td>
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<tr>
<td>MAE 441</td>
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<tr>
<td>MDTS 401, MDTS 501, MDTS 601</td>
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<tr>
<td>MLS 312, MLS 313, MLS 319, MLS 320, MLS 325, MLS 327, MLS 331, MLS 336</td>
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<tr>
<td>MLS 307</td>
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<tr>
<td>MET 387</td>
<td>$20</td>
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<tr>
<td>MET 200, MET 400, MET 415</td>
<td>$30</td>
</tr>
<tr>
<td>OEAS 106N, OEAS 126N</td>
<td>$20</td>
</tr>
<tr>
<td>OEAS 110N, OEAS 111N, OEAS 112N</td>
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</tr>
<tr>
<td>OEAS 440, OEAS 441, OEAS 442W</td>
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<tr>
<td>PT 627, PT 628, PT 826, PT 827</td>
<td>$150</td>
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<tr>
<td>STEM 110T, STEM 221, STEM 231, STEM 241, STEM 350, STEM 360</td>
<td>$20</td>
</tr>
<tr>
<td>THEA 341/COMM 341, THEA 370/COMM 370, THEA 380/COMM 380, THEA 385/COMM 385, THEA 446/COMM 446, THEA 483/COMM 483, THEA 486/COMM 486</td>
<td>$25</td>
</tr>
</tbody>
</table>

Other Charges and Fees—2019-20 Academic Year*

<table>
<thead>
<tr>
<th>Other Charges and Fees</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Fee**</td>
<td>$50</td>
</tr>
<tr>
<td>Technology-Delivered Course Fee</td>
<td>$30 per credit hour</td>
</tr>
<tr>
<td>Athletic Training (MSAT) Program Fee</td>
<td>$200 per semester</td>
</tr>
<tr>
<td>Graduate Engineering Program Course Fee</td>
<td>$25 per credit hour</td>
</tr>
<tr>
<td>MBA Program Course Fee</td>
<td>$125 per credit hour</td>
</tr>
<tr>
<td>Nursing Undergraduate Pre-Licensure Program Fee</td>
<td>$375 per semester</td>
</tr>
<tr>
<td>Nursing Graduate MSN Program Fee</td>
<td>$450 per semester</td>
</tr>
<tr>
<td>Nurse Anesthesia Program Fee</td>
<td>$1,500 per semester</td>
</tr>
<tr>
<td>Late Penalty Fee</td>
<td>5% of past due amount</td>
</tr>
<tr>
<td>Payment Plan Processing Fee (non-refundable)</td>
<td>$40</td>
</tr>
<tr>
<td>Returned Check Processing Charge</td>
<td>$50</td>
</tr>
<tr>
<td>Collection Fees</td>
<td>25% of past due amount</td>
</tr>
<tr>
<td>Transcript Processing Charge (per copy)</td>
<td>$5</td>
</tr>
<tr>
<td>Thesis, Dissertation Binding Service Charge (first five copies)</td>
<td>$60</td>
</tr>
<tr>
<td>Each Additional Copy</td>
<td>$18</td>
</tr>
<tr>
<td>Ph.D. Dissertation - Microfilming</td>
<td>$65</td>
</tr>
<tr>
<td>Ph.D. Dissertation - Copyrighting</td>
<td>$55</td>
</tr>
</tbody>
</table>

* 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 2019-20 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.
In-State Tuition Status (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. 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 alone does not qualify a person for classification as a Virginia student for tuition purposes. The application deadline for in-state status is the first day of classes of the term for which the in-state status is being sought.

The General Assembly of Virginia has enacted several special provisions for veterans, active duty military, spouses and dependents. Please refer to 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 in-state rate for tuition and fees purposes:

• A Veteran using educational assistance under either chapter 30 (Montgomery G.I. Bill – Active Duty Program) or chapter 33 (Post-9/11 G.I. Bill), of title 38, United States Code, who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth (regardless of his/her formal State of residence) and enrolls in the school within three years of discharge or release from a period of active duty service of 90 days or more.

• Anyone using transferred Post-9/11 GI Bill benefits (38 U.S.C. § 3319) who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth (regardless of his/her formal State of residence) and enrolls in the school within three years of the transferor's discharge or release from a period of active duty service of 90 days or more.

• Anyone using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. § 3311(b)(9)) who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of his/her formal State of residence).

• Anyone described above while he or she remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters, or terms) at the same school. The person so described must have enrolled in the school prior to the expiration of the three year period following discharge, release, or death described above and must be using educational benefits under either chapter 30, 31 or 33, of title 38, United States Code.

• An individual using educational assistance under chapter 31, Vocational Rehabilitation and Employment (VR&E) who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of his/her formal State of residence) eligible for courses, semesters, or terms beginning after March 1, 2019.

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.

Billing Cycle/Tuition Deadlines

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 by the tuition deadline 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 the collection agency and assessed an additional 25%. Tuition deadlines are published for each term: http://www.odu.edu/admission/costs-tuition/tuition/billing/due-dates.
Third-Party Payment Authorizations

The financial guarantee for payment of tuition and fees must be addressed specifically to Old Dominion University, Student Accounts, 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 Office of Finance web site, http://www.odu.edu/admission/costs-tuition/tuition/billing/payment-options/third-party.

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. 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 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 manager of student accounts/accounts receivable, 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 three 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, www.odu.edu/paymentplan). 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. 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 on the next billing date.

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 for refund dates: http://www.odu.edu/admission/costs-tuition/refunds.

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.

Old Dominion University 36
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 Engagement and Enrollment Services 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 and full details are available from the Office of Finance web site: http://www.odu.edu/admission/costs-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 23.1-640, 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 $23,850 for Virginia income tax purposes for the year preceding the year in which enrollment is sought;
- To register for and audit up to three courses offered for academic credit in any one semester for an unlimited number of semesters; and
- To register for and enroll in up to three courses not offered for academic credit in any one semester for an unlimited number of semesters.

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.

- Register only on or after the first official day of classes. (Eligible students may submit the form found at 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 $23,850 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
FAX (757) 683-4100
e-mail 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 families seeking educational programs at Old Dominion University. The Office administers financial aid programs funded by federal, state, University, and private sources in the form of grants, federal work-study programs, and merit and need-based scholarships. Also, federally supported loans are offered to qualified applicants through Federal Direct Subsidized loans, the William D. Ford Federal Direct Unsubsidized Loan and the Federal Direct PLUS loan programs. Alternative loan options are also available to support educational goals.

Regulations governing the administration of student financial aid are subject to unanticipated changes. For updated information, visit the website at www.odu.edu/finaidoffice or the Old Dominion University home page at www.odu.edu.

**Scholarships, Grants, Loans, and Student Employment**

The University offers a variety of awards each year to qualified students who have been admitted into degree programs. Financial aid is offered on the basis of academic achievement and/or financial need. Financial need is defined as the difference between the total cost of education at Old Dominion University and the amount of money an applicant and his or her family are expected to make available from income and assets to meet those expenses. The eligibility for non-need based loans programs, Federal Direct Unsubsidized loans and Federal Direct PLUS loans is determined by a multiple factors such as dependency status, student classification (undergraduate/graduate, grade level), cost of attendance, and total amount borrowed to date.

To be eligible for assistance from the most aid programs, a student must be a citizen or an eligible non-citizen. Some awards are designated only to Virginia residents while others are not restricted by residency. A student must be admitted and enrolled in an eligible degree 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). Certain aid programs require a student to maintain a full-time status. One exception to the requirement that students must enroll in a degree-seeking program applies to students admitted for purposes of teacher certification who apply 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. Students must reapply each year for continued eligibility. Applications for financial aid should be submitted as early as possible beginning in October preceding the academic year requested. Priority awards of grants funded by the Commonwealth of Virginia and 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 the established University priority deadlines each academic year of interest. Awards are offered on a first-come, first-served basis and dependent on fund availability.

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 January 1st 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 email to their Old Dominion University email accounts throughout the year. Alerts, reminders, and student-specific information are emailed through the University’s secure email 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 October 1 preceding the academic year for which application is made. (For example, a student planning to attend during the Fall Semester, 2019 would submit a financial aid application in October, 2018.) 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. When filing the 2019-20 FAFSA, tax information for 2017 will be submitted. 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 on the web at https://studentaid.ed.gov/sa/fafsa, which is a secure and convenient method for completing the application process. New! Students and parents can complete the 2019–20 FAFSA form using the myStudentAid app. Students and parents may download the myStudentAid app in the Apple App Store (iOS) or Google Play (Android). All applicants and parents of dependent applicants should apply for a FAFSA ID with the Department of Education at https://studentaid.ed.gov/sa/fafsa in order to be able 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 University established priority deadlines receive priority consideration. The FAFSA priority date is January 1 for all students (priority consideration as funds are available).

**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 Student Success Advisor and their financial aid counselor to determine if these forms are required.

Verification Process - NEW as of the 2019-20 Academic Year

Starting with the 2019-20 academic aid year, continuing/returning students selected for verification will be required to complete the verification process prior to receiving a financial aid award. This means that required verification documents must be received and processed prior to the receipt of an aid offer. The verification review process may take up to two weeks or longer during peak operating periods.

Satisfactory Academic Progress for Financial Aid Eligibility

The Policy

Maintaining Satisfactory Academic Progress (SAP) 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 timeframe 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:

- \[ \frac{.67 \times \text{Attempted Hours}}{\text{Minimum Hours}} = \text{Undergraduate student must earn} \]

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 ODU 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. Emotional or mental health issue (for student) that required professional care
5. Other unusual circumstances beyond the student’s control such as divorce/separation, natural disaster, extreme change in financial or legal circumstances or transition that may lead to depression, anxiety, and other problems that can be documented.
   a. 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.

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 Continuation of Academic Plan 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 the student how to re-establish eligibility if applicable.

Deadline to submit a SAP appeal for Fall - September 30
Deadline to submit a SAP appeal for Spring - February 27
Deadline to submit a SAP appeal for Summer - June 1

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.

Federal regulations limit the number of times a student may repeat a course and receive financial aid for that course. Ineligible repeated courses will be excluded from counting in the student’s enrollment for financial aid purposes.

A student may receive aid when repeating a course that was previously failed (received a failing or unsatisfactory grade), regardless of the number of times the course was attempted and failing provided the student meets the Satisfactory Academic Progress standards.

A student may receive aid to repeat a previously passed course (grade of ‘D’ or higher) one additional time. Once a student has completed any course twice with a passing grade (grade of ‘D’ or higher), he/she is no longer eligible to receive aid for that course. This rule applies whether or not the student received aid for earlier enrollments in the course.

Important Note: The Financial Aid Office does not determine if a student may repeat a class, only whether a student may be eligible for financial aid for a repeat class. For more information on the academic program’s policy regarding repeat coursework, students should contact their academic advisor.

In addition, every repeated course affects Satisfactory Academic Progress calculations; all repeated courses are counted as attempted credit hours.
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 Old Dominion University’s priority deadlines 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 or 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), Career Development Services (CDS), 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. CDS 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 CDS at (757) 683-4388 for information on completing the application process for these CDS managed programs.

*The Learn and Earn Advantage Program (LEAP) offers first and second year undergraduate ODU students the opportunity to be selected for part-time on-campus jobs with ODU departments and Regional Higher Education Centers. Jobs over the last two semesters averaged 10-15 hours per week with students making $8.00 per hour for a total maximum of $2,100 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 as funds allow. Students must meet minimum GPA requirements each semester, successfully complete the UNIV 130 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 application packets received by Career Development Services (CDS). Contact the CDS at (757) 683-4388 for more information about the application process.*

**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 these loans are completed on-line at STUDENTLOANS.GOV. The loans are subject to a Federal credit approval process at the time of submission. Parents are responsible for all payments and interest charges. PLUS loans are not automatically offered but are available upon the written request of the parent borrower by submission of a Parent PLUS Data Sheet found on-line at the Financial Aid website. Please note: Both the Federal on-line application found at STUDENTLOANS.GOV and the Parent PLUS Data Sheet found on the Financial Aid website must be completed.

**1-19: Children of Fallen Heroes Scholarship**

On March 23, 2018, the President signed Public Law 115-141, the Consolidated Appropriations Act, 2018, which included an amendment to Section 473(b) of the Higher Education Act, authorizing the Children of Fallen Heroes Scholarship. Under this scholarship, beginning with the 2019-2020 award year, a Pell-eligible student whose parent or guardian died in the line of duty while performing as a public safety officer is eligible to receive a maximum Pell Grant for the award year for which the determination of eligibility is made. To qualify for this scholarship, a student must be Pell-eligible, have a Pell-eligible EFC and be less than 24 years of age or enrolled at an institution of higher education at the time of his or her parent’s or guardian’s death. In subsequent award years, the student continues to be eligible for the scholarship as long as the student has a Pell-eligible EFC and continues to be an eligible student.

All Title IV aid awarded to such eligible students must be based on an EFC of zero without regard to the student’s calculated EFC. Thus, the student is eligible for the maximum Pell Grant for his or her enrollment status and cost of attendance. In addition, the student’s eligibility for Direct Loans and for Campus-Based program aid must be based on an EFC of zero.

For purposes of the Children of Fallen Heroes Scholarship, a public safety officer is:

- As defined in section 1204 of Title I of the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. 3796b); or
- A fire police officer, defined as an individual who is serving in accordance with state or local law as an officially recognized or designated member of a legally organized public safety agency and provides scene security or directs traffic in response to any fire drill, fire call, or other fire, rescue, or police emergency, or at a planned special event.

The Children of Fallen Heroes Scholarship requires the institution’s financial aid administrator (FAA) to determine and document, in collaboration with the student, that the student was less than 24 years of age or enrolled at an institution of higher education at the time of his or her parent’s or guardian’s death.

Acceptable documentation that may be used to determine eligibility for this scholarship are:

- A determination letter acknowledging eligibility for certain federal benefits under the Public Safety Officers Benefit (PSOB) program administered by the Department of Justice;
- A written letter of attestation or determination made by a state or local government official with supervisory or other relevant oversight.
authority of an individual who died in the line of duty while serving as a public safety officer as defined above;

- Documentation of the student qualifying for a state tuition or other state benefit accorded to the children or other family members of a public safety officer consistent with the definition in 42 U.S.C. 3796b, or as a fire police officer as noted above; or

- Other documentation the school determines to be from a credible source that describes or reports the circumstances of the death and the occupation of the parent or guardian.

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 deadlines established by the University given first consideration. Awards are limited to 125% of need (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 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. A student generally enters the VGAP program as a freshman. Awards may be renewed for up to three additional years provided that the student meets the renewal conditions and that funding is available. Renewal of the VGAP grant is dependent upon several factors: maintaining full-time continuous enrollment, maintaining domiciliary residency in Virginia, demonstrating continued financial need, maintaining a college grade point average of at least 2.0 on a 4.0 scale, or equivalent, and maintaining the satisfactory academic progress standards of the institution for federal student aid programs. Students must also have advanced class levels upon completion of each full year of award received (VGAP is restricted to no more than one year – 12 months – per class level, freshman, sophomore, junior, senior). 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 recalcualted 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 require Promissory Notes. Federal Direct Student Loan promissory notes may be signed online. 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, 2002 Rollins Hall, Norfolk, VA 23529-0052. The form must be received by January 1 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). FAFSAs received by the federal processor before Old Dominion University established priority deadlines receive priority consideration. The FAFSA priority date is January 1 for all students (priority consideration as funds are available).

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. 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 through August of each year. All scholarships must be formally accepted in writing.

Awards for Entering Freshmen

The Old Dominion University Alumni Association (ODUAA) Legacy Scholarship Endowment was established to assist children of an Old Dominion University (“ODU”) alumnus/ae. The recipient(s) must be a full-time undergraduate student in good academic standing. It is the intention of the ODUAA for the scholarship to be awarded to a freshman and follow the recipient during his/her time at ODU (up to four years).

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 scholarship is renewable.

The Edward N. Antoun, AH Environmental Endowed Scholarship in Environmental Engineering was established to assist a full-time undergraduate student intending to major in civil and environmental engineering. The recipient must attain a minimum high school GPA of 3.2 and be a U.S. Citizen or Permanent Resident.

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 Endowed Scholarship for Residents of Lambert’s Point is funded by an endowment established by Peter G. Decker and the estate of Celia Stern. This scholarship is awarded to students who have recently graduated from a local high school who reside in Lambert’s Point at the time of application to Old Dominion University. Recipients must maintain a GPA of 2.5 and demonstrate financial need.

The Haislip-Rorrer Presidential Scholars Endowment was established by Wallace Haislip and Linda Rorrer to assist one or more full-time entering freshmen with outstanding academic credentials. Preference is given to students who have recently graduated from a local high school who reside in Lambert’s Point at the time of application to Old Dominion University. Recipients must maintain a GPA of 2.5 and demonstrate financial need.

The Ellen P. Harvey Scholarship Endowment was established to assist an incoming freshman student who demonstrates financial need and maintains a minimum grade point average of 3.0. (FAFSA)

The Forrest H. Harrell, Jr. Scholarship Endowment was established to assist an incoming freshman student who demonstrates financial need and maintains a minimum grade point average of 3.0. (FAFSA)

*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 Forrest H. Harrell, Jr. Scholarship Endowment was established to assist an incoming freshman student who demonstrates financial need and maintains a minimum grade point average of 3.0. (FAFSA)

The Ellen P. Harvey Scholarship Endowment was established by Old Dominion University to assist one or more full-time entering freshmen with outstanding academic merit credentials. Preference is given to resident(s) of Lambert’s Point, Highland Park, or Park Place neighborhoods surrounding Old Dominion University, or a graduate of the Lambert’s Point Summer program sponsored by the University.

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*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 Ann 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)

*The Newport News Shipbuilding Engineering Endowment* was established to assist undergraduate students majoring in engineering or engineering technology who hold a minimum 2.5 cumulative grade point average. The recipient may also be an undergraduate student enrolled as engineering intended in the Engineering Fundamentals Division with a minimum 3.0 cumulative high school grade point average. Preference will be given to students who are Pell eligible. (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 ODU CDC Scholarship Endowment* was established to assist a student who is a resident of Lambert’s Point, Highland Park or Park Place neighborhoods surrounding Old Dominion University. The recipient must demonstrate financial need, and preference will be given to an incoming freshman student. (FAFSA)

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 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 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. Rodrey 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 Elliot 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 College of Arts and Letters General Scholarship was established to
assist a full-time student in the College of Arts and Letters.

* The Dance Endowed Scholarship was established to assist a full-time
undergraduate or graduate student(s) studying in the College of Arts and
Letters who has a minimum grade point average of 2.75. Preference will be
given to student(s) pursuing a degree in dance.

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 Daniel E. Frank Memorial Scholarship Endowment for
Blacksmithing and Metalwork was established by Mrs. Rita A. Frank to
assist a full-time student enrolled in the College of Arts and Letters and
classified as a sophomore, junior or senior. Graduate students are also
eligible for consideration. The recipient must be enrolled in studio Art,
blacksmithing, metalwork, jewelry-making or equivalent courses. The
scholarship recipient must have a minimum grade point average of 3.0 or
better and demonstrate financial need. (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 Linda Holmgren Jensen Endowed Scholarship for the Arts was
established by George and Linda Jensen to support a full-time sophomore
student studying in the College of Arts and Letters. Student must be an art
major, and preference is given to a student with financial need. (FAFSA)

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 Robert James Markland Memorial Scholarship Endowment for Criminal Justice was established to assist undergraduate students who may be past or present members of the Norfolk Police Department or a Virginia Marine Resource Commission Officer. The recipient must demonstrate financial need. Secondary preference is given to a student in the College of Arts and Letters with a declared major in criminal justice with intention to pursue a career in law enforcement. (FAFSA)

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 Helen and Richard Parker Scholarship Endowment in Art History was established by Helen and Richard Parker to assist one full-time undergraduate student majoring in art history. The scholarship recipient must demonstrate financial need and must have a minimum cumulative GPA of 3.0 or better. (FAFSA)

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 James B. Reece Endowed Scholarship was established by William D. Brewer to assist undergraduate students majoring in English with a minimum 3.0 grade point average. The undergraduate must submit an essay on a general topic, such as the student’s reason for choosing to major in English. Scholarship recipients will be selected based upon need, scholarship, and character. (FAFSA and Essay submission required)

*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 Andrew Basil Tuck Memorial Scholarship for Music Business/Production was established to assist full-time undergraduate students enrolled in the College of Arts and Letters pursuing a Bachelor of Science degree in Interdisciplinary Studies with a major in music business/production. The recipient must be classified as a sophomore or above. Preference will be given to students from Roanoke County, Roanoke City, or City of Salem.

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 Charles Edgar Wilson, Jr. Scholarship Endowment was established to assist undergraduate students with a declared major in the College of Arts and Letters. The recipient must be full-time, a graduate of Tallwood High School or Kempsville High School, and demonstrate financial need. Preference is given to students who formerly participated in Men of Excellence at Tallwood High School or Men of Valor at Kempsville High School. (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 Yokum Endowed Scholarship was established by Drs. Vinod Agarwal and Gilbert Yokum 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 Gilmore Family Endowed Scholarship in Business* was established to assist full-time students enrolled or intending to enroll in the Strome College of Business. Consideration is given to Gary A. Gilmore’s accounting background as a fundamental tool in his business success so that other considerations being equal, a prospective accounting major might have preference. The recipient must demonstrate financial need, and preference is given to students with at least a 2.8 grade point average. (FAFSA)

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 Toyke S. Jones Endowed Scholarship in Supply Chain Management* was established by Toyke S. Jones to assist a full-time sophomore, junior or senior student majoring in maritime and supply chain management. The recipient must demonstrate financial need and have a minimum cumulative grade point average of 3.0 (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 Kilmer Accountancy Scholarship Endowment* was established to assist full-time undergraduate or graduate student(s) with a declared major in accounting. The recipient must demonstrate financial need. (FAFSA)

*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.

Lobeck-Taylor Scholars was established to assist first-year student(s) enrolled in the Strome College of Business. Recipients must maintain a grade point average of 3.0 and express interest in entrepreneurial studies or starting their own business.

*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 Jean S. and Thomas W. Martin Jr. Endowed Accounting Scholarship* was established to assist a junior or senior undergraduate student in the Strome College of Business. The recipient must be majoring in accounting and must have a GPA of 3.3 or better. Preference is given to a Virginia resident, those who have served in the military and honorably discharged, and a student who demonstrates financial need. (FAFSA)

*The Hampton Roads Society of Financial Service Professionals Jane Martin 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 Robert W. Mitchell Endowed Scholarship in Real Estate* was established to assist a full-time student enrolled in the finance/real estate track in the Strome College of Business. The recipient must demonstrate...
financial need and maintain a minimum cumulative grade point average of 2.8. (FAFSA)

*Christine C. Pantoya Endowed Scholarship* was established to assist a student(s) with a declared or intended major within the Strome College of Business. The recipient must have a minimum grade point average of 3.0 and demonstrate financial need. Preference is given to a student(s) who is engaged in volunteer service to the community or the campus community. (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. Scholarship may be awarded to the student with the highest GPA and demonstrating the greatest financial need. (FAFSA)

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 Strome College of Business General Scholarship was established to assist a full-time student in the Strome College of Business.

*The Scott Thatcher Scholarship Endowment* was established to assist a full-time undergraduate or graduate student with a declared major in finance who demonstrates financial need. (FAFSA)

* Robert W. Thompson Endowed Accounting Scholarship* was established to assist students enrolled in the Strome College of Business with a declared accounting major or preference can be given to a student who intends to major in accounting. The recipient must have a grade point average of 3.0 and must demonstrate financial need. (FAFSA)

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 Accounting Endowed Scholarship for Underclassmen was established to assist full-time junior or senior students. Preference is given to students who intend to join or are members of the Managerial Auditing and Accounting Club (MAAC) and/or to those who have been inducted into the National Honor Society for accounting students, Beta Alpha Psi. The recipient(s) must exhibit extracurricular service outside of accounting activities such as part-time employment, an internship, or volunteer work. The recipient(s) must maintain a grade point average of 3.0.

The Vispo-Torgesen Marketing Scholarship for Underclassmen 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 and Professional Studies

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 Professional Studies and must have an overall cumulative 3.2 grade point average.

*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 Costulis Family Scholarship was established to assist full-time undergraduate students with a declared major in mechanical engineering or an approved Teacher Education program at Old Dominion University. The recipient must be a graduate of Poquoson High School, Maury High School, or Indian River High School, and must maintain a minimum grade point average of 3.3.

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

The Darden College of Education and Professional Studies General Scholarship was established to assist a full-time student in the Darden College of Education and Professional Studies.

*The Lorraine Buser Halsch ’80 Memorial Scholarship Fund in Special Education* was established by Paul Halsch in memory of his late wife, Lorraine Buser Halsch, an Old Dominion University alumnus who majored in special education. The recipient of this scholarship award must be a junior or senior with a declared major in special education, must have a grade point average of 3.0 or higher, and must demonstrate financial need. (FAFSA)

The Higginbotham Endowed Scholarship Fund was established by Hal B. Higginbotham to assist a rising junior or senior in teacher education in the Darden College of Education and Professional Studies. The recipient must be a full time student, child or grandchild of an ODU graduate, and must have a minimum grade point average of 3.0.

*The Libbie and Albert Kaplan Scholarship in Special Education* was established by Mr. Jay Kaplan and Mrs. Libbie Kaplan to provide an annual scholarship to assist a full-time graduate student seeking a master's degree in special education. The recipient must maintain a grade point average of 3.0, and demonstrate financial need. In addition, the recipient must be from the Tidewater area or secondly, must reside in Virginia. (FAFSA)

The Dr. Helen Moore Scholarship Endowment was established to assist full-time undergraduate student(s) in the Darden College of Education and Professional Studies.

*The Donald J. Musacchio Scholarship Endowment* was established to assist students in the Darden College of Education and Professional Studies. The recipient must be in good academic standing and must have completed at least 24 credit hours. The recipient must submit a one-page personal statement and three letters of recommendation not to exceed two letters from ODU faculty or professors and one letter from a personal reference. The
selection of the award will be determined by the Dean of the Darden College of Education and Professional Studies.

*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 J. Frank Sellev Memorial Scholarship in Education* was established by the friends and family of Mr. Sellev. 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 and Professional Studies.

*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 and Professional Studies 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 Ulysses Turner Scholarship in Educational Curriculum and Instruction* was established by Ulysses Turner to assist a full-time undergraduate student enrolled in the Darden College of Education and Professional Studies within the Department of Teaching and Learning with a focus on teaching from grades K-12. The recipient must demonstrate financial need and must have a minimum grade point average of 2.5. (FAFSA)

*The Patricia Goodman Waldo Scholarship Endowment for Special Education* was established to assist a full-time undergraduate junior or senior student admitted in the approved teacher education program with the special education general curriculum K-12 endorsement. The recipient must demonstrate financial need and must have a minimum grade point average of 3.2. (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 Professional Studies 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 Edward N. Antoun, AH Environmental Endowed Scholarship in Engineering was established to assist a full-time undergraduate student intending to major in civil and environmental engineering. The recipient must attain a minimum high school GPA of 3.2 and be a U.S. Citizen or Permanent Resident.

*The Michael Baker International Scholarship Endowment* was established to assist full-time undergraduate students majoring in civil engineering or civil engineering technology. The recipient(s) must demonstrate financial need and must have a minimum cumulative grade point average of 3.0. Preference is given to undergraduate students from Virginia, but Virginia residency is not essential. (FAFSA)

The Batten College of Engineering and Technology General Scholarship was established to assist a full-time student in the Batten College of Engineering and Technology.

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. Preference is given to a student involved in Code for America or a local software development group. 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 Costulis Family Scholarship* was established to assist full-time undergraduate students with a declared major in mechanical engineering or an approved Teacher Education program at Old Dominion University. The recipient must be a graduate of Poquoson High School, Maury High School, or Indian River High School, and must maintain a minimum grade point average of 3.3.

*The Dr. Frederick J. Berger and Gary R. Crossman Endowed Scholarship in Engineering Technology* was established to assist a full-time undergraduate student majoring in civil engineering or civil engineering technology who will have completed 58 or more credits and will qualify as a junior in an engineering technology curriculum. The recipient must demonstrate financial need, attend Old Dominion University on campus and hold an overall minimum cumulative grade point average of 3.0. (FAFSA)

The Electrical and Computer Engineering Scholarship was established to assist undergraduate students majoring in Electrical Engineering or Computer Engineering. The recipient must be a rising sophomore, junior, or senior and must have a minimum GPA of 2.75.

*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 Hope and Faith Garcia Modeling and Simulation Engineering Scholarship was established to assist undergraduate students majoring in modeling, simulation, and visualization engineering (MSVE) who hold a minimum 2.0 cumulative GPA. Preference is given to members of the ODU Student Chapter of the Society of Women Engineers (SWE). The recipient(s) must be enrolled at least half-time or enrolled in co-op education/ intern position.

The Jodi S. Gidley Legacy Scholarship was established to assist full-time students who participated in the Engineering Early Advantage Program for Women. The recipient must be enrolled in the Batten College of Engineering and Technology.

The Goodman Networks Endowed Scholarship in Engineering Technology was established by Goodman Networks to assist full-time undergraduate students studying engineering technology in the Frank Batten College of Engineering and Technology. Preference will be given to high school students and/or a member of at least one of the following organizations: Society of Women Engineers (SWE), National Society of Black Engineers (NSBE), and Society of Hispanic Engineering Professionals (SHPE). A minimum grade point average of 3.0 is required. Following the completion of the academic year in which the scholarship is awarded, the recipient may have the opportunity to receive a paid internship with Goodman Networks.

The John Group International Engineering Merit Scholarship was established to assist undergraduate sophomore, junior, or senior engineering students with a minimum grade point average of 3.0. Preference will be given to a student majoring in civil engineering, who must have graduated from one of the following high schools in Hampton Roads: Lake Taylor, 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 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: Lake Taylor, Maury, or Granby. Student 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 demonstrates a minimum 3.0 cumulative high school 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 Mr. Winfred D. Nash and Patricia D. Nash Endowed Scholarship in Electrical and Mechanical Engineering Technology was established to assist an undergraduate transfer student from a Virginia Community College majoring in electrical or mechanical engineering technology. The recipient must demonstrate financial need and have a minimum cumulative grade point average of 3.0. (FAFSA)

*The SoldierStrong ABT STEM Scholarship for Female Veterans was established to assist a female veteran student majoring in engineering or technology in the Batten College of Engineering and Technology. The recipient must be a full-time undergraduate or graduate student with a minimum cumulative grade point average of 3.0.

*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 additional international studies. 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 Triton International Enterprises Scholarship Endowment was established to assist full-time undergraduate or graduate student(s) from the country of Turkey with preference given to student(s) residing in a city OTHER THAN Istanbul, Ankara, Izmir, Bursa, Antalya or Adana. Recipient must be enrolled in Old Dominion University’s Frank Batten College of Engineering & Technology.
*The Clarke and Susan Vetrano 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. (FAPSA)

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. (FAPSA)

*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. (FAPSA)

*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. (FAPSA)

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. (FAPSA).

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 a minor or certificate in occupational safety and submit an essay no longer than 500 words to the Environmental Health Faculty committee describing personal career goals in industrial hygiene or occupational health. The recipient must be enrolled in Old Dominion University School of Nursing. The recipient must demonstrate financial need. (FAPSA)

*The Bon Secours Hampton Roads Health System Scholarship* was established to assist a full-time senior undergraduate enrolled in the Old Dominion University Nursing program. The recipient must demonstrate financial need (as determined by the Office of Student Financial Aid). The recipient must agree to a Role Transition experience with a minimum of 120 clinical hours (140 for honors students) at Bon Secours Hampton Roads Health System facility or its successor (School of Nursing will supervise). The student(s) will agree to placement in a specialty area including but not limited to: Emergency Room, Operating Room, Intensive Care Unit or Critical Nursing. (FAFSA)

*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 College of Health Sciences General Scholarship was established to assist a full-time student in the College of Health Sciences.

*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 Cathy Dowrick Memorial Endowed Scholarship* was established by Barbara Williams and the Clinical Laboratory Management Association (CLMA) to assist a full-time senior admitted into the medical laboratory science program. The recipient must be a declared major in medical laboratory science and 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 Jordan and Carol Levitin Endowed Scholarship in Nursing* was established to assist a full-time pre-licensure undergraduate student(s) enrolled in the Old Dominion University School of Nursing. The recipient must demonstrate financial need. (FAFSA)

*The LifeNet Health College of Health Sciences Endowed Scholarship* was established to assist a full-time senior student(s) enrolled in Old Dominion University’s School of Medical Diagnostic and Translational Sciences. Student(s) are encouraged to participate in a 3-4 week Internship at LifeNet Health or its successor. (School of Medical Diagnostic and Translational Sciences will coordinate/supervise), and the internship must be completed prior to graduation. The recipient must demonstrate financial need. (FAFSA)

*The LifeNet Health Medical Technology Endowed Scholarship* was established to assist full-time seniors enrolled in the Old Dominion University medical laboratory science 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 Marton Technologies Scholarship* was established to assist a student admitted to the Old Dominion University Bachelor of Science in Environmental Health degree program or the Master of Science in community health/environmental health degree program. The recipient must be enrolled full-time and maintain a minimum grade point average of 3.5. In addition, the recipient must be enrolled in Sampling and Analysis Laboratory, with a minor or certificate in occupational safety and submit an essay no longer than 500 words to the Environmental Health Faculty committee describing personal career goals in industrial hygiene or occupational safety and health and reason(s) for choosing this field of study.

The Barbie Morgan Endowed Scholarship for Nurse Anesthesia Students was established to assist full-time senior nurse anesthesia student(s). Students interested in the scholarship must submit an application to the Graduate Nursing Awards Committee. The application packet should...
describe his/her volunteer activities, include a letter of support from the volunteer organization(s), and provide evidence of demonstrated clinical excellence as reported by preceptor feedback and evaluations.

The Samuel B. Murphey Scholarship in Nursing was established by the family and friends of Samuel B. Murphey to assist a rising sophomore, junior, or senior student in nursing with a minimum grade point average of 2.5.

The Oral Health Community Impact Scholarship was established to assist all enrolled dental hygiene student(s) in the BSDH and MSDH programs. Interested student(s) must have a minimum grade point average of 3.0 and must submit an application packet to the Dental Hygiene Scholarship Committee. The packet should contain information that describes his/her leadership, volunteer and extra-curricular initiatives to increase oral health literacy in the community and include a letter of support from impacted volunteer/community organization(s).

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 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 Rev. Dr. Russel J.-Dr. George E. Emig-Carole Ann Schrott Memorial Endowed Scholarship was established by an anonymous donor to assist junior and senior undergraduate students with a declared major in dental hygiene, who upon graduation, intend to enter the workforce or a master’s program. The scholarship recipient must have a minimum grade point average of 3.0, demonstrate financial need, and be a Hampton Roads resident. Secondary consideration may be given to a junior or senior declared nursing major who, upon graduation, intends to enter the workforce or a master’s program. (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 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 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 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 Dr. Allen K. Clark Endowed Scholarship in Chemistry was established to assist a full-time undergraduate or graduate student majoring in chemistry or organic chemistry. Preference will be given to a student who is an affiliate of the American Chemical Society. The recipient must maintain a grade point average of at least 3.0.

*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. Preference is given to a student involved in Code for America or a local software development group. Student must demonstrate financial need. (FAFSA)

The College of Sciences General Scholarship was established to assist a student enrolled in the College of Sciences. Scholarship selection is determined by the Dean in the College of Sciences.

*The Joseph Fleischmann Scholarship Endowment was established to assist a full-time undergraduate sophomore, junior or senior student enrolled in pre-med or nursing major. Preference is given to a student pursuing medical research. The recipient must maintain a minimum GPA of 3.0 and 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 Chaudhury, Dr. Triptesh Chaudhury, Mr. Tannay 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 Old Dominion University Biology Scholarship Endowment was established to assist full-time undergraduate student(s) in biology. The recipient must be a graduate of a Hampton Roads area high school and must demonstrate financial need. (FAFSA)

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 Cramer-Skinner Scholarships are funded through an endowment established by Mr. and Mrs. Jay G. Cramer 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)

The Jennifer Fitzgibbon Honors College Endowed Scholarship was established to assist an incoming freshman admitted in the Honors College who has a strong career interest in engineering or finance. The recipient must be enrolled full time and submit a 500 word essay pertaining to career goals.

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. Gravelly 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 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) 683-6856

*The Scherberger-Barrett Memorial Scholarship for Disabled Veterans was established in memory of Colonel (USA, Ret) Richard J. and Virginia Barrett Scherberger to assist a student who has a service-connected disability. The student veteran must provide documentation from Veterans Affairs as proof of service-connected disability status, have a minimum cumulative grade point average of 2.5, and demonstrate financial need. (FAFSA)

Other Awards (General)

The James W. and Virginia R. Armstrong Scholarship for Women was established to assist a female undergraduate student with one or more dependent children, must be enrolled full time or part-time, and maintain a minimum grade point average of 3.0.

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

The BBL ODU Endowed Scholarship was established by SpringHill Suites by Marriott to assist a student from the Lambert’s Point neighborhood of Norfolk. The recipient must be a full-time sophomore, junior or senior student who successfully participated in the University’s Lambert’s Point Summer Program authorized by the Director of the Lambert’s Point Program.

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 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 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 students 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 Scholarships 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 has completed at least 24 credit hours, maintains a cumulative GPA of 3.0, and must demonstrate evidence of community service activities and/or achievement.

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 STAAS (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 William A. Giandoni Scholarship was established to assist a full-time undergraduate student in need of financial assistance.

*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 Robert J. Kasdon Endowed Scholarship* was established to assist two full-time students who are residents of the City of New York or the State of New Jersey. The recipient must demonstrate financial need. (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 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)

*The Landmark Foundation Opportunity Scholarship* was established to assist in-state undergraduate students who 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 female student in the College of Business and Public Administration. 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 Jeffrey Moore Scholarship Endowment* was established by C. Jeffrey Moore to assist a full-time undergraduate student with a cumulative grade point average of 3.0 or better. The recipient must demonstrate financial need. (FAFSA)

The Dr. Wendy M. Moore and Shirley Virginia Young Snead STEM Scholarship was established to assist a full-time senior student(s) who is an American citizen in a major that is considered part of the Science, Technology, Engineering and Math (STEM) areas. The recipient must be a legal resident of, or a graduate of, a high school in the following counties in this order: (1) King George; (2) Westmoreland; and (3) Caroline. Preference will be given to a woman from a county as listed above. The recipient must maintain a grade point average of 3.0.

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 renewable for a maximum of three additional years. (FAFSA)

*The ODU Monarch Community Alliance 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 ODU Women’s Initiative Network Endowed Scholarship* was established to assist a full-time student who demonstrates financial need. Preference will be given to a freshman or sophomore student. (FAFSA)

The Old Dominion University Alumni Association Merit Scholarship was established in 2002 to assist full-time undergraduate students. The recipient(s) must maintain a grade point average equivalent to that of the current merit scholarship standards. The recipient must be willing to participate as the student representative to the Old Dominion University Alumni Association Board of Directors if so requested. ODU Alumni Legacy is a benefit in evaluation but not an essential requirement.

The Faculty Emeriti Association Klinefelter/Phillips Scholarship was established to provide financial assistance to the children of Old Dominion University faculty. The Faculty Emeriti Association Scholarship Committee annually determines the best qualified students among candidates who meet the criteria stated in the Memorandum of Understanding with the Old Dominion University Educational Foundation.

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 Student Scholarship Fund

The recipients must have an advisor's recommendation.

*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 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 Student Scholarship Fund was established by the Vice President for Advancement to assist undergraduate students.

*The Tang Family Scholarship Endowment* was established to assist a full-time student who demonstrates financial need. The recipient must maintain a cumulative grade point average of 3.0 or better. (FAFSA)

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 citizens and residents of the Commonwealth of Virginia.

*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 E. C. Wareheim Foundation “Returning Women” 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 Scholarship Endowment was established by Lewis and Lisa Warren to assist a full-time undergraduate student with sophomore or greater standing. The recipient must have a minimum 3.2 grade point average. Preference is given to a student who has demonstrated participation in community service activities.

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 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 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.

Other Financial Aid Resources

The David Allan Derbysire Leadership Scholarship was established to assist entering freshmen and/or undergraduate students who have established a history of leadership and service at the high school or collegiate level and are interested in continuing in that role. This is a merit based scholarship. The recipient(s) must maintain a cumulative grade point average of 3.0, enroll as a full-time student, and must submit an essay about their growth and development as a leader. Students must apply each year by submitting their essay to the Dean of Students for scholarship selection consideration. Preference may be given to a Circle K member.

*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) 683-6856
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. (FASFA)

The Vicki and Abe Kalfus Endowed Scholarship was established to assist students intending to major in accounting, political science, or the medical field. The recipient must be enrolled as a full-time student, be a Virginia resident and citizen of the U.S, and demonstrate financial need. (FASFA)

The George Wilcox Kirby, Jr. Scholarship was established by George Wilcox Kirby, Jr. to assist full-time undergraduate students.

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 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 Claire M. Silva Endowed Scholarship was established to assist a female undergraduate student with a major or minor in a STEM or math-related field (i.e. accounting, economics, etc.) who has made a significant difference on campus or in the community as a role model, consistently demonstrates behaviors associated with a Monarch Citizen, and has a minimum ODU cumulative grade point average of 3.0 or high school equivalent if recipient is an incoming freshman.

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

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 and Procedures

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.

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).

Self-service is available for most processes in Leo Online. On the Norfolk campus, walk-up services are available at the office in Rollins Hall. 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 a summer and winter 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 includes a Winter term that begins after fall commencement and ends before spring semester classes begin.

Spring semester begins one week prior to the Martin Luther King (MLK) 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 a three-week Maymester, along with one 12-week and two six-week sessions.

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 when enrolling in this online format.

Summer and Winter Terms

Old Dominion University offers a summer program that includes a three-week Maymester, along with one 12-week and two six-week sessions. More than 1,550 graduate and undergraduate courses are offered on campus, off campus and online during the summer months.

The University also offers select classes during winter term, which is between the December graduation and the start of spring semester classes.
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. All students are required to be enrolled in 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.

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, Center for Advising Administration and Academic Partnerships, to enroll in more than 18 credit hours. A student on academic warning may not enroll in more than 15 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 15 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, Center for Advising Administration and Academic Partnerships.

Spring semester includes a winter term that begins after fall commencement and ends before spring semester classes begin. Summer term includes a three-week Maymester, along with one 12-week and two six-week sessions. A student may not enroll in more than four hours during winter term or Maymester. Credits earned during winter term will not count against the semester’s credit caps.

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 be classified based upon credit hours accepted by Old Dominion University.

Classification of students will be determined at the end of each semester.

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](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. First semester students may register during their Preview orientation date.

Documents should be mailed or delivered to the Veterans Certifying Officer, Office of the University Registrar, 1009 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](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

Class Schedule Changes and Drop/Add Procedures

During the fall and spring semesters, students may add and drop classes within the first 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 https://portal.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: http://odu.edu/registrar/forms.

First-year students 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 at https://www.odu.edu/academics/calendar 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 at www.odu.edu/finance.

Classes are not dropped for non-attendance or non-payment.

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 record entered on the student’s permanent academic record. Please refer to www.odu.edu/Registrar and click on the link to “Academic Calendar” for the dates to drop classes in courses not spanning the full semester.

Classes are not dropped for non-attendance or non-payment.

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 and click on the link to “Academic Calendar” for the dates to withdraw from classes in courses not spanning the full semester. 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, Student Success Coach (for online students), 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 non-semester 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.

Students who have a financial hold on their record are not able to withdraw from classes online. However, they may withdraw by the published deadline at the Registrar’s Office between 8:00 a.m. and 5:00 p.m. Monday-Friday. The office is located at 1009 Rollins Hall.

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 their 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.

Classes are not dropped for non-attendance or non-payment.

Drop and Withdrawal Deadlines

Specific deadline dates for dropping and withdrawing from classes can be found at the Registrar’s Office website, www.odu.edu/registrar, by clicking on the link to “Academic Calendar.”

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 Director of Student Outreach and Support in Student Engagement and Enrollment Services. These requests must include clear and compelling reasons for not submitting 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.
- “Reimbursement” 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 and Transportation Services, and the University Village 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 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 University Village 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 resellable 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 when grades are due following term according to the following schedule: I grades from the fall semester become F’s if not removed by the day grades are due for the spring semester; I grades from the spring semester and the summer session become F’s if not removed by the day grades are due for 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 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.
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.

Course Offerings for Credit and Noncredit

If a course is offered as both a noncredit and a credit offering, students must elect one or the other prior to the add/drop deadline. They will pay the fee for tuition for the elected offering by the tuition deadline. Students who register for a noncredit course may not elect to receive credit for it at any point after the add/drop deadline. Completed noncredit work may be reviewed as part of a Prior Learning Assessment to determine if the award of academic credit is appropriate. Noncredit courses will not meet undergraduate or graduate degree requirements.

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 Transfer Student Centers website. 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, 1004 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.
Virginia Tidewater Consortium Exchange Program

Old Dominion University students may take courses at any of the following Consortium institutions: Christopher Newport University (Newport News), College of William and Mary (Williamsburg - limited number of 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 an ODU cumulative grade point average 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.
5. Cross-registration courses count as resident credit at the home institution, not the host institution.

For further information, please contact the Office of the University Registrar at (757) 683-4425 or visit the office in Rollins Hall.

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. Online students work with their assigned online Student Success Advisor 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 Student Success Advisor. 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 Student Success Advisor to formally declare a major. Upon meeting the University, college, and departmental/school requirements for declaring the major and/or minor, the academic advisor or the Student Success Advisor 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 Linked Undergraduate to Graduate Degree Programs

Old Dominion University hosts a number of linked undergraduate to graduate programs, including bachelor’s to master’s programs and bachelor’s to doctoral programs, that permit undergraduate students to begin graduate study as early as the junior year. For linked bachelor’s to master’s programs, students must earn a minimum of 150 credit hours (120 discrete credit hours for the undergraduate degree, 30 discrete credit hours for the graduate degree). For linked bachelor’s to doctoral programs, students must earn a minimum of 198 credit hours (120 discrete credit hours for the undergraduate degree, 78 discrete credit hours for the graduate degree).

Undergraduate students enrolled in linked graduate degree programs at Old Dominion University may take up to 21 hours of graduate credit that can be applied toward their undergraduate degrees. Of these 21 hours of graduate credit, up to 12 can be applied toward both the undergraduate and graduate degrees. This option is available only to those students who have satisfied all admission and continuation requirements of the specific linked programs. All graduate hours applied to the undergraduate degree will be counted in the undergraduate grade point average, will appear on the undergraduate transcript, and will be used to determine graduation with honors. Undergraduate students accepted into linked graduate degree programs will be formally admitted to the graduate program following receipt of the bachelor's degree.

Approved linked bachelor’s to master’s degree programs are as follows:

College of Arts and Letters
- Bachelor of Arts or Bachelor of Science (various majors) to Master of Business Administration
- Bachelor of Arts or Bachelor of Science (various majors) to Master of Public Administration
- Bachelor of Arts in Art History to Master of Arts in Humanities
- Bachelor of Arts or Bachelor of Science in Communication to Master of Arts in Humanities
- Bachelor of Arts or Bachelor of Science 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 or Bachelor of Science in Geography to Master of Arts in Humanities
- Bachelor of Arts in History to Master of Arts in History
- Bachelor of Arts or Bachelor of Science 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 of Arts in Studio Art to Master of Arts in Humanities
- Bachelor of Arts in Women’s Studies to Master of Arts in Humanities
- Bachelor of Fine Arts (Art) to Master of Arts in Humanities

Strome College of Business
- Bachelor of Arts in Economics to Master of Business Administration
- Bachelor of Arts in Economics to Master of Public Administration
- Bachelor of Arts or Bachelor of Science (various majors in other colleges) to Master of Business Administration
- Bachelor of Arts or Bachelor of Science (various majors in other colleges) to Master of Public Administration
- Bachelor of Science in Business Administration to Master of Business Administration
- Bachelor of Science in Business Administration to Master of Public Administration
- Bachelor of Science in Business Administration to Master of Science in Accounting

Darden College of Education and Professional Studies
- Bachelor of Science (various majors) to Master of Business Administration
- Bachelor of Science (various majors) to Master of Public Administration

Batten College of Engineering and Technology
• Bachelor’s in Engineering or Engineering Technology to Master of Engineering, Master of Science, or Master of Engineering Management

College of Health Sciences
• Bachelor of Science in Dental Hygiene to Master of Science in Dental Hygiene
• Bachelor of Science in Environmental Health to Master of Science in Community Health

College of Sciences
• Bachelor of Science (various majors) to Master of Business Administration
• Bachelor of Science (various majors) to Master of Public Administration
• Bachelor of Science (various majors) to Medical Doctor (in cooperation with the Eastern Virginia Medical School)
• Bachelor of Science in Biochemistry to Master of Science in Chemistry
• Bachelor of Science in Chemistry to Master of Science in Chemistry
• Bachelor of Science in Computer Science to Master of Science in Computer Science
• Bachelor of Science in Mathematics to Master of Science in Computational and Applied Mathematics

Approved linked bachelor’s to doctoral degree programs are as follows:

College of Engineering and Technology
• Bachelor’s in Engineering or Engineering Technology to Ph.D. in Engineering

Undergraduate Students with Senior Standing but not Enrolled in Programs with a Linked Graduate 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, will appear on the undergraduate transcript, and will 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 available only to degree-seeking undergraduate students at Old Dominion University.

Students who apply graduate credit to their undergraduate degree and continue in a graduate program at Old Dominion University in the same area must earn a minimum of 30 discrete credit hours for a master's degree and 78 discrete credit hours for a doctoral degree.

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 (18 semesters) from the date of the first enrollment. For example, students beginning in the fall 2019 semester may use any Catalog in effect from fall 2019 through the end of the 2025 summer term, students beginning in spring 2020 may use any Catalog in effect from spring 2020 through the end of the fall 2025 semester, and students beginning in summer 2020 may use any Catalog in effect from summer 2020 through the spring 2025 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 2020 may use any Catalog in effect from summer 2014 through spring 2020, students graduating in summer 2020 may use any Catalog in effect from fall 2014 through summer 2020, and students graduating in fall 2020 may use any Catalog in effect from spring 2015 through fall 2020.

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.

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.

Qualified students should access and download a current copy of the Degree Works degree evaluation from https://portal.odu.edu/ and consult with the academic advisor or Student Success Advisor (for online students) prior to submission of the application for graduation to ensure that degree requirements are being met. Students who have elected a minor must consult a representative in the minor department to ensure that minor requirements are being met. After meeting with the academic advisor and verifying eligibility for graduation, students should submit the online application for graduation. Paper applications for graduation are not accepted.

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. All students should apply for graduation by using the online process at LEO Online.

Students pursuing two degrees simultaneously must submit graduation applications for each degree.

Students can view their application and degree status in LEO Online. Once the application has been processed, the student’s graduation status appears as “accepted.” The status changes to “awarded” once the degree is conferred. Degree conferral occurs after the official date of graduation and may take up to four weeks.

Students who do not complete degree requirements as expected will be notified via email and must reapply for the graduation date in which they will complete their degree.

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 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. The writing intensive course must be taken at Old Dominion University and cannot be met through transfer coursework or through enrollment in the Virginia Tidewater Consortium. 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.

**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:

<table>
<thead>
<tr>
<th>Honors</th>
<th>Minimum Number of Credit Hours</th>
<th>Minimum Number of Grade-Point Graded Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cum Laude 3.4-3.65</td>
<td>60</td>
<td>54</td>
</tr>
<tr>
<td>Magna Cum Laude 3.66-3.85</td>
<td>60</td>
<td>54</td>
</tr>
<tr>
<td>Summa Cum Laude 3.86-4.00</td>
<td>60</td>
<td>54</td>
</tr>
</tbody>
</table>

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 Prior Learning Assessment credit options (advanced placement, University exams, departmental exams, external exams such as CLEP and DANTES, portfolio review, and training) does not apply to the 45 credit hours required for departmental honors.

For students in approved linked undergraduate to graduate 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 Perry 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 Perry Honors College for additional information.

**Commencement**

Commencement exercises are intended for students who are eligible and reasonably expect to complete degree requirements to graduate from the University within the current or following graduation period.

Commencement ceremonies are managed through the Office of University Events. Information about requirements for participation in commencement ceremonies is available at http://www.odu.edu/academics/graduation-commencement. To be eligible to participate in ceremonies, candidates must indicate their intent when they apply for graduation; any change must be communicated to the Office of University Events.

May commencement ceremonies are intended for candidates graduating in May and students who expect to complete studies in August. December commencement ceremonies are intended for candidates graduating in December and students who completed studies the preceding August.

Students who expect to attend commencement ceremonies must have applied for graduation. Tickets will not be provided by the Commencement Office to students that have not applied. Participation in commencement ceremonies does not confirm that a degree has been (or will be) conferred. Degree conferral may take up to four weeks from the date of the commencement ceremony. With the exception of doctoral degrees, diplomas are not distributed at commencement.

**Diplomas**

Diplomas are available for pickup at the Registrar’s office. Students will be contacted via email when their diploma is available. Diplomas that are not picked up will be mailed to the student’s permanent address. Students should verify address information in LEO when applying for graduation.

Diplomas will be mailed beginning in June for May graduates, in September for August graduates and in January for December graduates.

All holds, debts or other obligations to the University must be satisfied before the diploma will be released. Information about holds can be viewed in Leo Online at https://portal.odu.edu/.

The student’s legal name (as maintained in the official student record) 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 Degree Programs listing in this catalog. Neither the major nor the minor appears on the diploma, but will appear on the transcript.
Transcripts

Transcripts are provided by the Office of the University Registrar and are issued only as requested through LEO Online. Official electronic transcripts (PDF) can be ordered through Parchment, the University’s electronic transcript service provider. Transcripts 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 and for those ordered through Parchment. Students may access and print unofficial transcripts for personal use through LEO Online at no charge.

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 https://www.sreb.org/academic-common-market.
Academic Policies

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 “A” 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 for campus-based and higher education center courses, if given, are to be given at the time provided on the Registrar’s Office website at www.odu.edu/registrar. Upon request of the instructor, exceptions to this regulation may be made only by the dean. Final examinations are normally scheduled in the classroom where the course has met throughout the semester.

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.

System of Grading

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points</th>
<th>Undergraduate</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.00</td>
<td>Superior</td>
<td>Excellent</td>
</tr>
<tr>
<td>A-</td>
<td>3.70</td>
<td>Superior</td>
<td>Excellent</td>
</tr>
<tr>
<td>B+</td>
<td>3.30</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>B-</td>
<td>2.70</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>C+</td>
<td>2.30</td>
<td>Satisfactory</td>
<td>Poor</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
<td>Satisfactory</td>
<td>Poor</td>
</tr>
<tr>
<td>C-</td>
<td>1.70</td>
<td>Passing</td>
<td>Poor</td>
</tr>
<tr>
<td>D+</td>
<td>1.30</td>
<td>Passing</td>
<td>Not Used</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
<td>Passing</td>
<td>Not Used</td>
</tr>
<tr>
<td>D-</td>
<td>0.70</td>
<td>Passing</td>
<td>Not Used</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
<td>Failing</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>WF</td>
<td>0.00</td>
<td>Unofficial</td>
<td>Unofficial</td>
</tr>
<tr>
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<td>None</td>
<td>Pass</td>
<td>Pass</td>
</tr>
<tr>
<td>F (P/F)</td>
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<td>Fail</td>
<td>Fail</td>
</tr>
<tr>
<td>O</td>
<td>None</td>
<td>Audit</td>
<td>Audit</td>
</tr>
<tr>
<td>I</td>
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<td>Incomplete</td>
</tr>
<tr>
<td>II</td>
<td>None</td>
<td>Not Used</td>
<td>Incomplete not Subject to Time Limit</td>
</tr>
<tr>
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<td>None</td>
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<td>Official Withdrawal</td>
</tr>
<tr>
<td>Q</td>
<td>None</td>
<td>Progress but not Proficiency</td>
<td>Not used</td>
</tr>
<tr>
<td>Z</td>
<td>None</td>
<td>No Grade Reported</td>
<td>No Grade Reported</td>
</tr>
</tbody>
</table>

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.
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
giveness 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 continuation, 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: Policy and Procedures**

**I. Policy and Purpose**

A. 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).

B. 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.

C. Students must initiate the first review of the appeal within 45 days
of the official end of the semester in which the grade was awarded.
For grades awarded and appealed from fall and summer semesters,
the entire appeal process must be completed before the official end
of the next semester; the entire appeal process for grades awarded
and appealed from the spring semester must be completed before
the official end of the next fall semester.
II. Procedure

Prior to initiating a formal appeal, the student must attempt to consult with the instructor to request an explanation of the method of evaluation and to determine whether an error has been made. This consultation may be face to face, via e-mail, phone, or video conference if both agree, and efforts to consult with the instructor must be documented by the student. If at any point in the appeals process the student and instructor, or the student and a subsequent appeals body, agree that a grade of P is acceptable, that grade shall be assigned for the course and the appeals process will conclude. At all stages of the grade appeal processes outlined below, the instructor and student shall be notified of any actions recommended or taken by the chair, Grade Appeal Review Committee, Dean (or designated Associate Dean) or Provost and Vice President for Academic Affairs (or designated Vice Provost).

A. First Review of Appeal

1. If the student is not satisfied with the results of the consultation with the instructor, or the instructor is not available as described in section IV. B, then the student may file a grade appeal. The chair of the department in which the instructor is teaching will conduct the first review of the student’s appeal, unless the instructor is the department chair. The student’s case must be presented on the Grade Appeal Form with supporting documents/explanations to the instructor’s department chair within 14 days of the consultation with the instructor.

2. The student’s Grade Appeal Form should include (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 other supporting documentation.

3. The chair shall notify the instructor of the appeal and provide the instructor with copies of the form and other documents that were submitted. The chair or Dean (or designated Associate Dean) shall also request a response from the instructor that should include at a minimum the course syllabus, grade distribution for the course, attendance policy, the grading plan for the course, and other grading rubrics.

4. The chair shall review all documents and may hold a hearing where both the instructor and student are present. (See section V. for guidelines for hearings.) No other persons will attend the hearing and the hearing must be recorded.

5. If the chair concludes that there is no cause for complaint, the student and the instructor will be notified in writing of the decision within seven days of receipt of the request for an appeal and the supporting documents. The student may request a second review of the appeal (see section II.B. for details).

6. If the chair concludes that there is valid cause for the complaint, the chair should consult with the instructor and student and attempt to mediate the dispute by working with both parties to agree on an appropriate course grade. 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 agreement in writing. If the instructor and student agree to a grade change or to award a grade of P, the instructor will make the official grade change.

7. If mediation fails, the chair will notify the college Grade Appeal Review Committee of the need for a review and submit all documents to the committee. The instructor and the student will be notified of this action.

8. The chair will ask the college Grade Appeal Review Committee to appoint the reviewers within five working days. (See Section III for the composition of the committee.)

   a. The faculty and the student who form the Grade Appeal Review Committee will notify the instructor and student involved in the appeal when the review will take place and request needed documents.

   b. The Grade Appeal Review Committee will review the documents, consult with relevant parties as needed and determine if there is sufficient evidence in the documents to support the student’s appeal, or if more information is needed in which case a hearing with the student and instructor may be held. (See Section V for details about the hearing.) The review and hearing must be scheduled within 15 days of the receipt of the materials by the committee.

   c. If the Grade Appeal Review Committee finds that there is sufficient evidence that the grade was awarded with prejudice or caprice, they may consult with the instructor to suggest a grade change and provide a rationale for that decision. The decision and rationale must be provided in writing to the instructor. The final outcome of the committee’s review will be documented and communicated to the instructor, the student, the department chair, and Dean.

9. If the instructor is a Dean or Vice President, the student will submit the Grade Appeal Form and documents to the Dean (or designated Associate Dean) and the Dean (or designated Associate Dean) will conduct the first review following the procedures described in II.A.1-8.

10. If the instructor is a Dean or Vice President, the student will submit the Grade Appeal Form and documents to the chair of the department in which the Dean or Vice President is teaching the course.

B. Second Review of Appeal

1. The student may request a second review of the appeal if the conclusion of the first review is that there is no cause for complaint. The request for a second review must be submitted within seven days of the denial of the first review. The student should request in writing that the person responsible for conducting the first review forward the grade appeal package to the person responsible for conducting the second review. The instructor is notified of this action.

2. When the instructor is a faculty member, the Dean (or designated Associate Dean) is responsible for conducting the second review. If the instructor is the chair and the Dean (or designated Associate Dean) conducted the first review, the Provost and Vice President for Academic Affairs or designated Vice Provost is responsible for conducting the second review. If the instructor is a Dean or Vice President and the chair of the department in which the Dean or Vice President is teaching conducted the first review, the Provost and Vice President for Academic Affairs or designated Vice Provost is responsible for conducting the second review.

3. The second review shall follow the same procedures as the first review, as described in section II.A.1—4.

4. If the person to whom the second review is submitted concludes that there is no cause for complaint, the student and the
instructor will be notified in writing that the grade appeal process is complete. No further appeal will be allowed.

5. If the person to whom the second review is submitted concludes that there may be valid cause for the complaint, the procedures as described in section II.A.6–8 will apply.

III. Grade Appeal Review Committee
A. Committee Composition and Duties
1. Each college will create a Grade Appeal Review Committee that has one representative from each department in the college and a list of potential student members. If an appeal is heard, the Dean will select two faculty members and one student from these lists.

2. Representatives must be full-time tenured or tenure-track faculty in an academic department elected by the department faculty. At least two committee members shall be tenured. No administrator, such as a Chief Departmental Advisor or Graduate Program Director, shall be eligible to serve on the committee.

3. Terms of service will be for two years. Members may be re-elected for an additional two-year term.

4. At the beginning of each academic year, each department in the college will submit a list of full-time students who are eligible and willing to serve on the committee. This list will be formulated each year. When needed, one student will serve on a review committee.

5. The committee will select its own chair and develop guidelines for the review process and procedures.

6. Two faculty members and one student selected from the names submitted by each department will review the appeal including documents from the student filing the appeal and the instructor of record. Neither the faculty members nor the student member shall be from the instructor’s or student’s department.

7. 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.

IV. Instructors’ Responsibilities and Rights
A. The following are guides for the instructor’s responsibilities and rights.

1. Instructors have a responsibility to meet with students to explain the course grading procedure and the process for determining the final grade.

2. When requested, instructors must provide the documents requested for a review at all levels. These documents will include at a minimum the course syllabus, grade distribution for the course, attendance policy, and grading procedures for course tasks with rubrics. Other documents may be included or requested.

3. The instructor must assist in making arrangements for a hearing when one is needed.

4. Instructors have the responsibility to participate in a grade appeal.

5. No instructor shall be forced or coerced into making a grade change.

B. Unavailable Instructors
1. In the event a student makes documented efforts to consult with an instructor and is unable to find the instructor, or does not receive a response, the student shall seek assistance from the chair.

2. When the chair has made reasonable efforts to contact an instructor whose final grade is being appealed and is unsuccessful, the Grade Appeal Review Committee and chair will independently review available materials and reach a consensual decision. In the event that these two reviews reach different decisions that are not reconciled, the Provost and Vice President for Academic Affairs or designated Vice Provost will make a final decision. No other appeal can be made.

a. If the decision is in favor of the student, and the student is not willing to accept a grade of P, the Provost and Vice President for Academic Affairs or designated Vice Provost will submit the recommended grade change to the Registrar. Only the Provost and Vice President for Academic Affairs or designated Vice Provost is authorized to change an instructor’s grade upon the recommendation of the college Grade Appeal Review committee.

b. If the decision is not in favor of the student, the instructor’s original grade will remain.

3. In the event of an instructor’s unavailability due to death, serious illness, or any other cause that would prevent the instructor from participating in the process in time for the process to be completed during the designated semester, the procedure in II.A.1. and IV.B.2 will be followed.

V. Procedures for Hearings
A hearing involving the faculty member and the student may be held at any level of appeal.

A. After the Grade Appeal Review Committee reviews the appeal form and supporting documents and the instructor’s documents, a hearing may be held to clarify issues and/or to receive further evidence.

B. Hearings may be held at any level only when both the instructor and the student can participate. No other persons may attend this hearing.

C. The conclusions, decision(s), and a rationale for these must be disseminated in writing to the instructor and to the student.

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 an additional hearing may be made to the Dean (or designated Associate Dean), or when the chair or Dean is the instructor, to the Provost and Vice President for Academic Affairs or designated Vice Provost. The only basis for an appeal will be the failure to have been provided due process as prescribed by the policy.

VI. Records
A. The original Grade Appeal Form and all decision letters for each level of review will be kept in a secure location in the Dean’s office for a minimum of one year.

B. Recordings of hearings will be kept in the Dean’s office for a minimum of one year.

VII. Assignment of P Grade
A P grade established under this policy at any stage of the grade appeal process 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.

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.
Prior Learning Assessment Credit Options at the Undergraduate Level

Old Dominion University offers a program for assessing college-level knowledge gained through professional work and training experiences 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, or documented training programs, as determined by academic departments. A student may earn a maximum of 60 semester hours at the undergraduate level through Prior Learning Assessment 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 the Prior Learning Assessment representative in the Center for Advising Administration and Academic Partnerships for an exception to the maximum of 60 credit hours. Requests will be forwarded to the appropriate department for review. Prior Learning Assessment 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 Prior Learning Assessment representative in the College of Continuing Education and Professional Development, who forwards the request to the appropriate faculty. 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 Prior Learning Assessment representative in the Center for Advising Administration and Academic Partnerships.

The following regulations for Prior Learning Assessment credit will apply:

1. All approved Prior Learning Assessment options will be granted with credit.
2. Prior Learning Assessment 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 Prior Learning Assessment 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 a Prior Learning Assessment option.
5. A student may not enroll in a course for credit or audit at Old Dominion University and subsequently seek credit through a Prior Learning Assessment option.

6. No letter grades will be entered on the student’s transcript for Prior Learning Assessment credit. This credit will be treated in the same way as transfer credit: a “XP” (Pass) will be assigned and it will not count in the student’s grade point average.
7. A student must request Prior Learning Assessment credit as early as possible upon admission to degree status.
8. Prior Learning Assessment credit does not count toward the University’s residency requirement. A student earning prior learning 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 prior learning credit to apply to a certificate, endorsement or teacher licensure program. Prior Learning Assessment 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 Prior Learning Assessment credit for a certificate area may be eligible to attempt additional Prior Learning Assessment credit toward a degree program.
10. Prior Learning Assessment credit earned at another institution will be re-evaluated by Old Dominion University faculty to determine whether credit may be awarded at Old Dominion.

The privilege of seeking Prior Learning Assessment credit is available to both full-time and part-time degree status students only. A student should consult with the degree program advisor, Student Success Advisor (for online students), distance learning representative, advisor or Prior Learning Assessment coordinator in the Center for Advising Administration and Academic Partnerships at the beginning of his or her academic career at Old Dominion University to determine how Prior Learning Assessment may be applicable to the degree. For further information, visit the Prior Learning Assessment web site at www.odu.edu/academics/academic-records/evaluation-of-credit/prior-learning.

For information about Prior Learning Assessment options for graduate students, please see the section of the Graduate Catalog on Prior Learning Assessment Credit Options at the Graduate Level.

**Procedures for Prior Learning Assessment**

Students wishing to receive academic credit for departmental examinations, training or portfolio development through Prior Learning Assessment should do the following:

1. Contact the Prior Learning Assessment representative in the Center for Advising Administration and Academic Partnerships to discuss possible challenges. The Prior Learning Assessment representative and student will discuss guidelines on requesting approval to challenge a course(s) through the available Prior Learning Assessment options.
2. Submit an extended resume and other documentation demonstrating learning outcomes based upon prior learning to the representative in the Center for Advising Administration and Academic Partnerships.
3. The Prior Learning Assessment representative will submit the documentation to the department chair, or a designated faculty assessor, who will examine the request and determine eligibility to challenge the course(s). The department’s decision will be forwarded to the Prior Learning Assessment representative who will then notify the student.
4. Once determination is made that the student is eligible to challenge the course(s) through Prior Learning Assessment, the student will complete and return to the Prior Learning Assessment office the appropriate intake request form. At this time, the student’s account will be billed, and the appropriate Prior Learning Assessment fee should be paid. Specific instructions for completing the process will be available from the Prior Learning Assessment Office, located in the University Testing Center, in the Student Success Center.
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 Prior Learning Assessment representative in the Center for Advising Administration and Academic Partnerships.

The Prior Learning Assessment 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.

External Examinations. External examinations, including CLEP and DANTES, are administered through the University Testing Center. Students wishing to receive academic credit for external examinations should contact the Testing Center at (757) 683-3697. Additional information is available from the website at https://www.odu.edu/academics/academic-records/score-analysis/clep-dantes.

Prior Learning Assessment Fees*

Students participating in the Prior Learning Assessment 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 Prior Learning Assessment fee for the granting of academic credit for external examinations.

2. **Departmental Examination**
   The Prior 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 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 (and therefore incur no additional fee), see the Prior Learning Assessment web site at https://www.odu.edu/academics/academic-records/evaluation-of-credit/prior-learning.

4. **Portfolio**
   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 is approved to submit a portfolio, departmental examination or training documentation for evaluation.

For more information call (757) 683-6554, visit the web site at https://www.odu.edu/academics/academic-records/evaluation-of-credit/prior-learning or email priorlearning@odu.edu.

* All fees are tentative and subject to final approval by the Board of Visitors and/or the president. Current Prior Learning Assessment fees are available on the website at https://www.odu.edu/academics/academic-records/evaluation-of-credit/prior-learning/fees.

**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 2.0 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.leoonline.odu.edu. The University makes every reasonable effort to notify undergraduate students who are not in good standing of their academic status. An email will be sent to each undergraduate student (degree and non-degree seeking) placed on academic warning, academic probation and suspension. The e-mail 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 an 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 15 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.

2. **ACADEMIC PROBATION.** A student on academic probation who earns a grade of less than C in any course will be placed on academic suspension. A student on academic suspension will be placed on academic suspension for one semester with the provision that if the student earns a C or above in every course attempted, the student will be reinstated to good standing. A student on academic suspension who earns a grade of less than C in any course will be placed on academic suspension for two semesters with the provision that if the student earns a C or above in every course attempted, the student will be reinstated to good standing.

3. **ACADEMIC SUSPENSION.** A student on academic suspension who earns a grade of less than C in any course will be placed on academic suspension for two semesters. A student on academic suspension who earns a grade of less than C in any course will be placed on academic suspension for two semesters with the provision that if the student earns a C or above in every course attempted, the student will be reinstated to good standing. A student on academic suspension who earns a grade of less than C in any course will be placed on academic suspension for two semesters with the provision that if the student earns a C or above in every course attempted, the student will be reinstated to good standing.

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. Students on academic probation are required to participate in a Student Success program sponsored by the Student Success Center in their next semester of attendance. A student on academic probation may not enroll in more than 15 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 if the cumulative GPA is below 2.0.

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 one calendar year suspension (two semesters and a summer term). The student may be considered for readmission after a minimum one-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://www.odu.edu/content/dam/odu/offices/student-financial-aid/docs/odu-sap-appeal-final-revised.pdf.

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**Academic Standing**
- **Good Standing**: 2.00+ cumulative GPA
- **Academic Warning (1st occurrence)**: 1.99 or less cumulative GPA
- **Academic Probation (1st occurrence)**: 1.99 or less cumulative GPA
- **Academic Probation (2nd and subsequent occurrences)**: Term GPA = 2.0 or above AND cumulative GPA = 1.99 or less

**Grade Point Average**
- **First Suspension (see below)**: Term GPA AND cumulative GPA = 1.99 or less
- **Second suspension**: Term GPA AND cumulative GPA = 1.99 or less

**Requirements**
- **Initial term of academic difficulty; student eligible to continue**
- **Second consecutive term of academic difficulty; student eligible to continue**
- **Second consecutive and subsequent term(s) on academic probation; student eligible to continue with a minimum 2.0 term GPA**

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**Guidelines for filing a suspension appeal for continuous enrollment:**

**2019 – 20 Suspension Appeal Deadlines:**

<table>
<thead>
<tr>
<th>Suspension Posted</th>
<th>Appeal Application Deadline</th>
<th>Appeal Decision Posted</th>
</tr>
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<tbody>
<tr>
<td>December 2019</td>
<td>January 6, 2020</td>
<td>January 8, 2020</td>
</tr>
<tr>
<td>May 2020</td>
<td>May 18, 2020</td>
<td>May 20, 2020</td>
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</table>

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/ 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 suspected student. Appeal letters must provide sufficient detail and explanation regarding the points listed below because there is no face-to-face meeting with appeal committee members. The decision of the appeals committee is final.

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.**

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 one-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.odu.edu/continuance in order to re-enroll and must submit all necessary documentation. The deadlines to reapply for admission are as follows:

   Fall semester - third Friday in August
   Spring semester - third Friday in December
   Summer semester - third Friday in April

   Readmission requests received after the deadline will not be considered. Students must resubmit the application by the next deadline.

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 complete an online workshop conducted by the Office of Continuance prior to the start of classes to complete the readmission process. Students who register for the workshop but fail to complete it by the add/drop period and students who fail to register for the workshop will be dropped from all classes by the Office of Continuance 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.

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 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 ensure 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).

Writing Program Requirements

Undergraduate Students without credit for freshman composition (ENGL 110C) must pass the Writing Sample Placement Test (WSPT) for placement into first-year writing courses. A passing score is required to register for ENGL 110C or ENGL 126C, first year composition courses. Students unable to earn a passing score may enroll in UNIV 150 Writing for College Success (3-credit elective course) or retake the WSPT a second time after reviewing their initial submission with a writing counselor in the Writing for College Success program. Successful completion of UNIV 150 (grade of C or better) meets the prerequisite for enrollment into ENGL 110C or ENGL 126C.

Retaking the WSPT - Students electing to take the WSPT a second time in order to improve writing placement are limited to one subsequent attempt during Preview. Students failing the WSPT a third time will register for UNIV 150.

Undergraduate Students with transfer credit for ENGL 110C are not required to complete the incoming writing assessment (WSPT). However, they are expected to be competent writers and must possess writing skills equivalent to those described in the outcome statements for equivalent ODU courses (i.e., ENGL 110C, ENGL 211C, etc.).

Although students with transfer credit for ENGL 110C are not required to take the WSPT, those wishing to complete the assessment measure for diagnostic purposes may do so by contacting the Writing for College Success Program.

ODU Online Students are considered part of the aforementioned cohorts (students with or without transfer credit for ENGL 110C) and must meet the assessment requirements of the undergraduate writing program. Students should contact their advisor with questions or concerns.

Assessment of Writing Proficiency

• All students enrolled in undergraduate degree programs must pass ENGL 110C (or its transfer equivalency) with a grade of (2.0) or better in order to register for ENGL 211C or ENGL 221C or ENGL 231C.
• Students must also pass ENGL 211C or ENGL 221C or ENGL 231C (or their transfer equivalency) with a grade of C (2.0) or better in order to register for a writing intensive (W) course.
• Students must complete their W course in the major at Old Dominion University with a grade of C (2.0) or better.

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. These 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.

Portfolio Waiver Option for ENGL 110C and ENGL 211C/ENGL 221C/ENGL 231C

ENGL 110C Portfolio Waiver Option. Students who have credit for ENGL 211C/ENGL 221C/ENGL 231C or equivalent but not ENGL 110C can provide a portfolio of their writing to determine if it is equivalent to the writing required in ENGL 110C. Students will be asked to provide samples of their writing, for example, from ENGL 2**C, a W course, or a different course. The portfolio of writing samples is submitted to the Department of English. If it is determined that the writing is equivalent to or exceeds the writing required in ENGL 110C, the student will be exempt from the ENGL 110C requirement. There would be no cost and no award of credit.

ENGL 211C/ENGL 221C/ENGL 231C Portfolio Waiver Option. In certain extenuating circumstances, the English Department may approve a waiver of the ENGL 2**C requirement. Students will be asked to provide a portfolio of student writing to determine if it is equivalent to the writing required in ENGL 2**C. Students may provide samples of their writing, for example, from their W course or a different course, but not writing from ENGL 110C. The portfolio of writing samples is submitted to the Department of English. If it is determined that the writing is equivalent to or exceeds the writing required in ENGL 2**C, the student will be exempt from the ENGL 2**C requirement. There would be no cost and no award of credit.

Distance Learners. Students may contact their advisor in distance learning 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 http://www.odu.edu/testing-center or the Office of Distance Learning at 1-800-968-2638.
### Arts and Letters

<table>
<thead>
<tr>
<th>Degree</th>
<th>Majors</th>
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<tbody>
<tr>
<td>Bachelor of Science</td>
<td>African American and African Studies, Communication, Criminal Justice, Cybercrime, Cybersecurity, Cyber Operations, General Engineering Technology, Geography, Interdisciplinary Studies, Leadership, Political Science, Professional Writing, Sociology, Women's Studies</td>
</tr>
<tr>
<td>Bachelor of Fine Arts</td>
<td>3D Media and Material Studies, Graphic Design, Painting and Drawing, Photography and Print Media</td>
</tr>
<tr>
<td>Bachelor of Music</td>
<td>Composition, Performance, Music Education, Sound Recording Technology</td>
</tr>
<tr>
<td>Master of Fine Arts</td>
<td>Creative Writing</td>
</tr>
<tr>
<td>Master of Music Education</td>
<td></td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Criminology and Criminal Justice, English, International Studies</td>
</tr>
</tbody>
</table>

### Business

<table>
<thead>
<tr>
<th>Degree</th>
<th>Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts</td>
<td>Economics</td>
</tr>
<tr>
<td>Master of Arts</td>
<td>Economics</td>
</tr>
<tr>
<td>Master of Business Administration</td>
<td></td>
</tr>
<tr>
<td>Master of Public Administration</td>
<td></td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Business Administration, Public Administration and Policy</td>
</tr>
</tbody>
</table>

### Education

<table>
<thead>
<tr>
<th>Degree</th>
<th>Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science</td>
<td>Career and Technical Education (Marketing Education and Technology Education), Early Childhood Education, Elementary Education, Exercise Science**, Human Services, Occupational and Technical Studies, Park, Recreation and Tourism Studies, Physical Education, Special Education, Speech-Language Pathology and Audiology, Sport Management</td>
</tr>
<tr>
<td>Master of Library and Information Studies</td>
<td></td>
</tr>
<tr>
<td>Master of Science</td>
<td>Exercise Science, Occupational and Technical Studies, Park, Recreation and Tourism, Speech-Language Pathology, Sport Management</td>
</tr>
<tr>
<td>Master of Science in Education</td>
<td>Counseling, Early Childhood Education, Educational Leadership, Elementary Education, Physical Education, Reading, Secondary Education, Special Education</td>
</tr>
<tr>
<td>Education Specialist</td>
<td>Counseling, Educational Leadership</td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Community College Leadership, Education</td>
</tr>
</tbody>
</table>
## Engineering and Technology

<table>
<thead>
<tr>
<th>Degree</th>
<th>Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science in Civil Engineering</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Electrical Engineering</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Mechanical Engineering</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Modeling and Simulation Engineering</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Engineering Technology</td>
<td>Civil Engineering Technology, Electrical Engineering Technology, Mechanical Engineering Technology</td>
</tr>
<tr>
<td>Master of Engineering</td>
<td></td>
</tr>
<tr>
<td>Master of Engineering Management</td>
<td></td>
</tr>
<tr>
<td>Master of Science</td>
<td>Engineering</td>
</tr>
<tr>
<td>Doctor of Engineering</td>
<td></td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Engineering</td>
</tr>
</tbody>
</table>

## Health Sciences

<table>
<thead>
<tr>
<th>Degree</th>
<th>Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science</td>
<td>Environmental Health</td>
</tr>
<tr>
<td>Bachelor of Science in Dental Hygiene</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Health Sciences</td>
<td>Health Services Administration</td>
</tr>
<tr>
<td>Bachelor of Science in Medical Laboratory Science</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Nuclear Medicine Technology</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Nursing</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Public Health</td>
<td></td>
</tr>
<tr>
<td>Master of Public Health</td>
<td></td>
</tr>
<tr>
<td>Master of Science</td>
<td>Dental Hygiene</td>
</tr>
<tr>
<td>Master of Science in Athletic Training</td>
<td></td>
</tr>
<tr>
<td>Master of Science in Nursing</td>
<td></td>
</tr>
<tr>
<td>Doctor of Nursing Practice</td>
<td></td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Health Services Research, Kinesiology and Rehabilitation</td>
</tr>
<tr>
<td>Doctor of Physical Therapy</td>
<td></td>
</tr>
</tbody>
</table>

## Sciences

<table>
<thead>
<tr>
<th>Degree</th>
<th>Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science</td>
<td>Actuarial Mathematics, Applied Mathematics, Big Data Analytics, Biochemistry, Biology, Chemistry, Ocean and Earth Science, Physics, Psychology, Statistics/Biostatistics</td>
</tr>
<tr>
<td>Bachelor of Science in Computer Science</td>
<td></td>
</tr>
<tr>
<td>Master of Science</td>
<td>Biology, Chemistry, Computational &amp; Applied Mathematics, Computer Science, Ocean and Earth Sciences, Physics, Psychology</td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Chemistry, Clinical Psychology, Computational &amp; Applied Mathematics, Computer Science, Ecological Sciences, Oceanography, Physics, Psychology</td>
</tr>
</tbody>
</table>

## Graduate School

<table>
<thead>
<tr>
<th>Degree</th>
<th>Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Science</td>
<td>Cybersecurity, Data Science and Analytics**</td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Biomedical Sciences</td>
</tr>
</tbody>
</table>

* Diplomas will indicate the name of the degree only, not the major.
** Pending approval of the State Council of Higher Education for Virginia.
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. Courses taken at Old Dominion University (as the host institution) through the Virginia Tidewater Consortium do not count toward resident credit. 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.

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 or 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 Prior Learning Assessment

All lower-level requirements within this program may be met by credit awarded to students who are able to demonstrate appropriate prior 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 Prior Learning Assessment Credit Options at the Undergraduate Level and visit the Prior Learning Assessment web site at https://www.odu.edu/academics/academic-records/evaluation-of-credit/prior-learning.

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 human behavior, society, and culture.
   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.
   a. Develop an understanding of technology 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.

**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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>English Composition (grade of C or better required)</td>
</tr>
<tr>
<td>ENGL 211C</td>
<td>English Composition (grade of C or better required)</td>
</tr>
<tr>
<td>ENGL 221C</td>
<td>Introduction to Writing in Business, Education and Social Sciences (grade of C or better required)</td>
</tr>
<tr>
<td>ENGL 231C</td>
<td>Introduction to Technical Writing (grade of C or better required)</td>
</tr>
</tbody>
</table>

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

A portfolio waiver option is available for ENGL 110C and ENGL 211C/ENGL 221C/ENGL 231C. Please refer to the section on Academic Testing and Placement (p. 19) in this Catalog for more information.

**B. Oral Communication**

Select one of the following courses 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 101R</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>COMM 103R</td>
<td>Voice and Diction</td>
</tr>
<tr>
<td>COMM 112R</td>
<td>Introduction to Interpersonal Communication</td>
</tr>
</tbody>
</table>
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, music composition, music education, all theatre arts majors, world languages and cultures concentrations in French, German and Spanish, and world languages and cultures teacher preparation; College of Education and Professional Studies - human services, occupational and technical studies concentrations in industrial technology and training specialist; College of Health Sciences - medical technology, nursing, dental hygiene, health sciences health services administration major, health sciences cybertechnology track and public health; and College of Sciences - ocean and earth science.

Students who complete the required courses in their major that meet oral communication and then change to a major that does not meet the requirement through courses in the major will have met the oral communication requirement for the new major.

C. Mathematics
Select one of the following courses 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 101M</td>
<td>An Introduction to Mathematics for Critical</td>
</tr>
<tr>
<td></td>
<td>Thinking</td>
</tr>
<tr>
<td>MATH 102M</td>
<td>College Algebra</td>
</tr>
<tr>
<td>MATH 103M</td>
<td>College Algebra with Supplemental Instruction</td>
</tr>
<tr>
<td>MATH 162M</td>
<td>Precalculus I</td>
</tr>
<tr>
<td>STAT 130M</td>
<td>Elementary Statistics</td>
</tr>
</tbody>
</table>

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*
Select 6 hours from the following courses unless the language requirement was met through high school coursework, transfer credit, or exemption.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARAB 111F</td>
<td>Beginning Arabic</td>
</tr>
<tr>
<td>CHIN 111F</td>
<td>Beginning Chinese</td>
</tr>
<tr>
<td>FR 101F</td>
<td>Beginning French I</td>
</tr>
<tr>
<td>&amp; FR 102F</td>
<td>and Beginning French II</td>
</tr>
<tr>
<td>GER 101F</td>
<td>Beginning German I</td>
</tr>
<tr>
<td>&amp; GER 102F</td>
<td>and Beginning German II</td>
</tr>
<tr>
<td>HEBR 111F</td>
<td>Beginning Hebrew I</td>
</tr>
<tr>
<td>ITAL 101F</td>
<td>Beginning Italian I</td>
</tr>
<tr>
<td>&amp; ITAL 102F</td>
<td>and Beginning Italian II</td>
</tr>
<tr>
<td>JAPN 111F</td>
<td>Beginning Japanese</td>
</tr>
<tr>
<td>LATN 101F</td>
<td>Beginning Latin I</td>
</tr>
<tr>
<td>&amp; LATN 102F</td>
<td>and Beginning Latin II</td>
</tr>
<tr>
<td>PRTG 101F</td>
<td>Beginning Portuguese I</td>
</tr>
<tr>
<td>&amp; PRTG 102F</td>
<td>and Beginning Portuguese II</td>
</tr>
<tr>
<td>RUS 101F</td>
<td>Beginning Russian I</td>
</tr>
<tr>
<td>&amp; RUS 102F</td>
<td>and Beginning Russian II</td>
</tr>
<tr>
<td>SPAN 101F</td>
<td>Beginning Spanish I</td>
</tr>
<tr>
<td>&amp; SPAN 102F</td>
<td>and Beginning Spanish II</td>
</tr>
</tbody>
</table>

Total Hours 6

111F courses are six credit hours each. Students may meet the language and culture 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 World Languages and Cultures 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.

* Does not apply to students earning high school diplomas before December 31, 1985.

E. Information Literacy and Research
Select one of the following courses 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 272G</td>
<td>Digital Literacy</td>
</tr>
<tr>
<td>CS 120G</td>
<td>Introduction to Information Literacy and Research</td>
</tr>
<tr>
<td>CS 121G</td>
<td>Introduction to Information Literacy and Research for Scientists</td>
</tr>
<tr>
<td>HLTH 120G</td>
<td>Information Literacy for Health Professions</td>
</tr>
<tr>
<td>IT 150G</td>
<td>Basic Information Literacy and Research</td>
</tr>
<tr>
<td>LIBS 110G</td>
<td>Information Literacy for the Digital Age</td>
</tr>
<tr>
<td>OEAS 130G</td>
<td>Research Skills and Information Literacy for the Natural Sciences</td>
</tr>
<tr>
<td>PHIL 290G</td>
<td>Philosophy of Digital Culture</td>
</tr>
<tr>
<td>STEM 251G</td>
<td>Computer Literacy: Communication and Information</td>
</tr>
</tbody>
</table>

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, Asian Studies depending on elective choice, cybercrime depending on elective choice, geography, history, history teacher preparation, international studies depending on elective choice, and political science; College of Engineering and Technology - all majors; College of Health Sciences – dental hygiene and nursing; College of Sciences - biochemistry depending on course selection, chemistry depending on course selection, chemistry with teaching licensure depending on course selection, and ocean and earth science.

Students who complete the required courses in their major that meet information literacy and research and then change to a major that does not meet the requirement through courses in the major will have met the information literacy and research requirement for the new major.
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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAST 100S</td>
<td>Introduction to African American Studies</td>
</tr>
<tr>
<td>ANTR 110S</td>
<td>Introduction to Anthropology</td>
</tr>
<tr>
<td>COMM 200S</td>
<td>Introduction to Human Communication</td>
</tr>
<tr>
<td>CRJS 215S</td>
<td>Introduction to Criminology</td>
</tr>
<tr>
<td>ECON 200S</td>
<td>Basic Economics</td>
</tr>
<tr>
<td>ECON 210S</td>
<td>Principles of Macroeconomics</td>
</tr>
<tr>
<td>ECON 220S</td>
<td>Principles of Microeconomics</td>
</tr>
<tr>
<td>ENTR 201S</td>
<td>Introduction to Entrepreneurship</td>
</tr>
<tr>
<td>FIN 210S</td>
<td>Personal Financial Literacy</td>
</tr>
<tr>
<td>GEOG 100S</td>
<td>Cultural Geography</td>
</tr>
<tr>
<td>GEOG 101S</td>
<td>Environmental Geography</td>
</tr>
<tr>
<td>POLS 100S</td>
<td>Introduction to International Politics</td>
</tr>
<tr>
<td>POLS 101S</td>
<td>Introduction to American Politics</td>
</tr>
<tr>
<td>POLS 102S</td>
<td>Introduction to Comparative Government and Politics</td>
</tr>
<tr>
<td>PSYC 201S</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>PSYC 203S</td>
<td>Lifespan Development</td>
</tr>
<tr>
<td>SOC 201S</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>WMST 201S</td>
<td>Introduction to Women's Studies</td>
</tr>
</tbody>
</table>

Total Hours

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 121A</td>
<td>Introduction to the Visual Arts</td>
</tr>
<tr>
<td>ARTS 122A</td>
<td>Visual Communication</td>
</tr>
<tr>
<td>COMM/THEA</td>
<td>Film Appreciation</td>
</tr>
<tr>
<td>270A</td>
<td>Dance and Its Audience</td>
</tr>
<tr>
<td>MUSC 264A</td>
<td>Music in History and Culture</td>
</tr>
<tr>
<td>THEA 241A</td>
<td>The Theatre Experience</td>
</tr>
</tbody>
</table>

Total Hours

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 100H</td>
<td>Interpreting the World Past Since 1500</td>
</tr>
<tr>
<td>HIST 101H</td>
<td>Interpreting the Asian Past</td>
</tr>
<tr>
<td>HIST 102H</td>
<td>Interpreting the European Past</td>
</tr>
<tr>
<td>HIST 103H</td>
<td>Interpreting the Latin America Past</td>
</tr>
<tr>
<td>HIST 104H</td>
<td>Interpreting the American Past</td>
</tr>
<tr>
<td>HIST 105H</td>
<td>Interpreting the African Past</td>
</tr>
</tbody>
</table>

Total Hours

D. Literature

This Way of Knowing emphasizes the contribution of literature to culture. Through critical reading and analysis, students will develop the ability to make effective use of the English language and informed aesthetic judgments about style and content.

Courses that meet the literature Way of Knowing are:

Select one of the following courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 112L</td>
<td>Introduction to Literature</td>
</tr>
<tr>
<td>ENGL 114L</td>
<td>American Writers, American Experiences</td>
</tr>
<tr>
<td>WCS 100L</td>
<td>Introduction to World Literatures and Cultures</td>
</tr>
</tbody>
</table>

Total Hours

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. The combination of BIOL 103, BIOL 240 and BIOL 241 or the combination of BIOL 103, BIOL 250 and BIOL 251 satisfies four credits of the nature of science requirement.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 105N</td>
<td>Biology for Nonscience Majors I</td>
</tr>
<tr>
<td>BIOL 106N</td>
<td>Biology for Nonscience Majors II</td>
</tr>
<tr>
<td>BIOL 110N</td>
<td>Environmental Sciences</td>
</tr>
<tr>
<td>&amp; BIOL 111N</td>
<td>and Environmental Sciences Lab</td>
</tr>
<tr>
<td>BIOL 112N</td>
<td>Environment and Man</td>
</tr>
<tr>
<td>&amp; BIOL 113N</td>
<td>and Environment and Man Laboratory</td>
</tr>
<tr>
<td>BIOL 117N</td>
<td>Introduction to Human Biology</td>
</tr>
<tr>
<td>&amp; BIOL 118N</td>
<td>and Introduction to Human Biology Lab</td>
</tr>
<tr>
<td>BIOL 121N</td>
<td>General Biology I</td>
</tr>
<tr>
<td>&amp; BIOL 122N</td>
<td>and General Biology I Lab</td>
</tr>
<tr>
<td>BIOL 123N</td>
<td>General Biology II</td>
</tr>
<tr>
<td>&amp; BIOL 124N</td>
<td>and General Biology II Lab</td>
</tr>
<tr>
<td>CHEM 105N</td>
<td>Introductory Chemistry</td>
</tr>
<tr>
<td>&amp; CHEM 106N</td>
<td>and Introductory Chemistry Laboratory</td>
</tr>
<tr>
<td>CHEM 107N</td>
<td>Introductory Organic and Biochemistry</td>
</tr>
<tr>
<td>&amp; CHEM 108N</td>
<td>and Introductory Organic and Biochemistry Laboratory</td>
</tr>
<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
</tr>
<tr>
<td>&amp; CHEM 122N</td>
<td>and Foundations of Chemistry I Laboratory</td>
</tr>
<tr>
<td>CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
</tr>
<tr>
<td>&amp; CHEM 124N</td>
<td>and Foundations of Chemistry II Laboratory</td>
</tr>
<tr>
<td>OEAS 106N</td>
<td>Introductory Oceanography</td>
</tr>
<tr>
<td>OEAS 108N</td>
<td>Understanding Global Climate Change</td>
</tr>
<tr>
<td>OEAS 110N</td>
<td>Earth Science</td>
</tr>
<tr>
<td>or OEAS 111N</td>
<td>Physical Geology</td>
</tr>
<tr>
<td>OEAS 112N</td>
<td>Historical Geology</td>
</tr>
<tr>
<td>OEAS 250N</td>
<td>Natural Hazards and Disasters</td>
</tr>
</tbody>
</table>

Total Hours
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 – communication depending on elective choice, cyber operations, cybersecurity, dance education, English teacher preparation, fine arts and studio arts depending on elective choice, world languages and cultures teacher preparation, geography depending on elective choice, history depending on elective choice, history teacher preparation, interdisciplinary studies majors in individualized integrative studies, interdisciplinary studies majors in cybercrime, game studies and design, leadership, and professional writing depending on elective choice; College of Education and Professional Studies – early childhood education, elementary education, exercise science, health and physical education teacher preparation, marketing education, all majors in occupational and technical studies, special education, and technology education; College of Engineering and Technology—all majors except civil engineering technology and modeling and simulation engineering; College of Health Sciences—health sciences health services administration major and public health; College of Sciences - earth science education.

Students who complete the required courses in their major that meet philosophy and ethics and then change to a major that does not meet the requirement through courses in the major will have met the philosophy and ethics requirement for the new major.

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 470T</td>
<td>Diseases That Changed our World</td>
</tr>
<tr>
<td>CHEM 171T</td>
<td>Influence of Polymers on Society</td>
</tr>
</tbody>
</table>

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, cyber operations, cybersecurity, dance education, English teacher preparation, fine arts and studio arts depending on elective choice, world languages and cultures teacher preparation, geography depending on elective choice, history depending on elective choice, history teacher preparation, interdisciplinary studies majors in individualized integrative studies, interdisciplinary studies majors in cybercrime, game studies and design, general engineering technology, leadership, and professional writing 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 and Professional Studies—early childhood education, elementary education, exercise science, health and physical education teacher preparation, marketing education, all majors in occupational and technical studies, special education, and technology education; College of Engineering and Technology—all majors except civil engineering technology and modeling and simulation engineering; College of Health Sciences—health sciences health services administration major and public health; College of Sciences - earth science education.

Students who complete the required courses in their major that meet impact of technology and then change to a major that does not meet the requirement through courses in the major will have met the impact of technology requirement for the new major.
Honors Courses that Meet General Education Requirements*

**Skills**

**Written Communication**
- ENGL 126C Honors: English Composition 3

**Oral Communication**
- COMM 126R Honors: Public Speaking 3

**Information Literacy and Research**
- CS 126G Honors: Introduction to Information Literacy and Research 3

**Ways of Knowing**

**Human Behavior**
- 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

**The Nature of Science**
- BIOL 136N & BIOL 137N Honors General Biology I & Honors General Biology I Lab 4
- BIOL 138N & BIOL 139N Honors General Biology II & Honors General Biology II Lab 4
- OEAS 126N Honors: Introductory Oceanography 4
- PHYS 126N & PHYS 127N Honors: Introductory Astronomy & Honors: Introductory Astronomy 8
- PHYS 226N & PHYS 227N Honors: University Physics I & Honors: University Physics II 8

**Philosophy and Ethics**
- PHIL 126P Honors: Introduction to Philosophy 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 Perry 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 and Occupational Health Administration and Law 3
- HLTH 425 Leadership and Management for Health Professionals 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
- MLS 403W Management in the Clinical Setting 3
- NMED 475W Administration and Management in Nuclear Medicine Technology 3
- NURS 480W Nursing in the Health Care System: Leadership 3
- NURS 490W Nursing Leadership 3
- PAS 301 Ethics, Governance and Accountability in Public Service 3
- PHIL 303E Business Ethics 3
- PHIL 344E Environmental Ethics 3
- PHIL 345E Bioethics 3
- PHIL 355E Cybersecurity Ethics 3
- PSYC 303 Industrial/Organizational Psychology 3
- SMGT 450W Ethics and Morality in Sport 3

**Biomedical Engineering Interdisciplinary Minor**

Nicola Lai, 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 prerequisites for BME 403, BME 404 and BME 406 are BIOL 240 or BIOL 250 and MATH 200, MATH 205 or MATH 211. Prerequisite courses are not included in the calculation of the grade point average for the minor.

Course requirements are as follows:

Select two of the following BME courses: 6

- BME 403 Introduction to Mathematical Modeling in Physiology
- BME 404 Introduction to Biomaterials
- BME 406 Transport Phenomena in Biomedical Systems

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 in Biological Sciences (approved by minor advisor)
- CHEM 443 Intermediate Biochemistry
- EXSC 322 Anatomical Kinesiology
- EXSC 417 Biomechanics
- ECE 454 Introduction to Bioelectrics
- ECE 462 Introduction to Medical Image Analysis (MIA)
- HLSC 405 Interprofessional Study Abroad on Global Health
- MAE 303 Mechanics of Fluids
- MAE 440 Introduction to Finite Element Analysis
- MLS 324 Clinical Instrumentation and Electronics
- MSIM 451 Analysis for Modeling and Simulation
- NMED 331 Fundamental Concepts in Nuclear Medicine Technology
- NURS 456 Global Health Perspectives

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 and MAE 440.

**Children’s Rights Interdisciplinary Minor**

Jessica Huffman, 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
Conservation Leadership Interdisciplinary Minor

Tatyana Lobova, Department of Biological Sciences, Coordinator (tlobova@odu.edu)

The interdisciplinary minor in Conservation Leadership is offered in collaboration with the U.S. Fish and Wildlife Service (USFWS) as part of a long-term, sustainable program of conservation-related service-learning, internships and leadership programs. The minor will facilitate the development of the next generation of professionals who can address conservation issues and challenges posed by a changing climate and sea level rise. A unique aspect of this interdisciplinary minor is the requirement to take one course that is designated as a service-learning (SL) course in which the student will work at a USFWS (or related) facility.

Course substitutions may be approved by the interdisciplinary minor coordinator.

Course requirements and options are as follows

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS/BIOL/OEAS 466W</td>
<td>Introduction to Mitigation and Adaptation Studies</td>
<td>3</td>
</tr>
<tr>
<td>IDS/BIOL/OEAS 467</td>
<td>Sustainability Leadership</td>
<td>3</td>
</tr>
<tr>
<td>IDS 368</td>
<td>Internship in Interdisciplinary Studies</td>
<td>3</td>
</tr>
<tr>
<td>Select two (6 credits of which 3 credits must be a Service-Learning (SL) course)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>BIOL 311</td>
<td>Global Change Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 334</td>
<td>Field Ethnobotany</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 404</td>
<td>Conservation Biology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 339T</td>
<td>The Chemistry of the Environment</td>
<td>3</td>
</tr>
<tr>
<td>CHP 328</td>
<td>Public Health Science</td>
<td>3</td>
</tr>
<tr>
<td>COMM 400W</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 301</td>
<td>Principles of Environmental Health Science</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 305</td>
<td>World Resources</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 306T</td>
<td>Hazards: Natural and Technological</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 396</td>
<td>Topics in Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 400W</td>
<td>Seminar in Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 402</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 419</td>
<td>Spatial Analysis of Coastal Environments</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 496</td>
<td>Topics in Geography</td>
<td>3</td>
</tr>
<tr>
<td>HLSC 405</td>
<td>Interprofessional Study Abroad on Global Health (SL)</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 310</td>
<td>Global Earth Systems</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 444</td>
<td>Communicating Ocean Science to Informal Audiences</td>
<td>3</td>
</tr>
<tr>
<td>PAS 300</td>
<td>Foundations of Public Service</td>
<td>3</td>
</tr>
<tr>
<td>PAS 301</td>
<td>Ethics, Governance and Accountability in Public Service</td>
<td>3</td>
</tr>
<tr>
<td>PAS 409</td>
<td>Leadership and Cultural Competence</td>
<td>3</td>
</tr>
<tr>
<td>PAS 411</td>
<td>Multi-Sector Partnerships for Public Service</td>
<td>3</td>
</tr>
<tr>
<td>POLS 335</td>
<td>Environmental Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 401</td>
<td>Global Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>POLS 455</td>
<td>The Politics of Climate Change</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 405</td>
<td>Outdoor Recreation (SL)</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 406</td>
<td>Outdoor Leadership and Environmental Education</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 433</td>
<td>Camp Administration (SL)</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 495</td>
<td>Topics (Natural Resource Management)</td>
<td>3</td>
</tr>
<tr>
<td>WMST 395</td>
<td>Topics in Women's Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 15

Cybercrime Interdisciplinary Minor

Roderick Graham, Program Coordinator and Faculty Advisor (rgraham@odu.edu)

The interdisciplinary minor in cybercrime provides students with an understanding of crime and deviance in the digital environment. Students will be required to take two introductory courses in the cybercrime and cybersecurity majors, respectively. In these core courses, students will learn the fundamental issues involved in cybersecurity (computer system architectures, critical infrastructures, cyber threats and vulnerabilities) and cybercrime (defining and describing the different types of computer-related crimes, the techniques used by law enforcement, and the legal issues inherent in combating cybercrime). They can then expand their knowledge by taking electives in psychology, political science, criminal justice, information technology, or cybersecurity. The minor aspires to develop graduates who can think critically about how human behavior impacts and is impacted by computer technologies.

Course substitutions may be approved by the interdisciplinary minor coordinator.

Prerequisite

CRJS 215S Introduction to Criminology *

Core **

CRJS 405 Cybercrime and Cybersecurity

CYSE 300 Introduction to Cybersecurity

Electives 6

CRJS 340 White-Collar Crime

CRJS 344 Social Science and Crime Mapping

IT 315 Introduction to Networking and Security

IT 360T Principles of Information Technology

CRJS/CYSE 406 Cyber Law

CRJS 395/396/495/496 Topics in Criminal Justice ***

CYSE 407 Digital Forensics

PHIL 355E Cybersecurity Ethics

PSYC 307 Institutionalization of Human-Centered Computing

PSYC 344 Human Factors

POLS 350T Technology and War

Total Hours 12

* Not included in the calculation of the grade point average for the minor.

** The two courses from the core and the two electives must be selected from at least two different disciplines with no more than six credits from any one discipline.

*** Must be approved by the program coordinator.

Cybersecurity Interdisciplinary Minor

Saltuk Karahan, Department of Political Science and Geography, Coordinator (skarahan@odu.edu)

This interdisciplinary minor in cybersecurity is focused on the technological, structural, social, and legal frameworks used to secure computer networks and software. The study of cybersecurity combines multiple fields including computer science, engineering, information technology, criminal justice, and philosophy, to name a few. In an effort to promote the security of computer networks, software, and cyber information, an interdisciplinary understanding about technological, legal, philosophical, and structural aspects of cyber crime is needed. This minor will provide students from different majors the knowledge they need to prevent or respond to cyber incidents they are likely to encounter in their careers.

Course options are as follows:

CRJS 405 Cybercrime and Cybersecurity 3

CS 462 Cybersecurity Fundamentals 3 or ECE/MSIM 470 Foundations of Cyber Security

CS 463 Cryptography for Cybersecurity 3

CS 464 Networked Systems Security 3

Old Dominion University 86
The course requirements are as follows:

Four courses chosen from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CET 355</td>
<td>Sustainable Building Practices</td>
</tr>
<tr>
<td>CEE 459</td>
<td>Biofuels Engineering</td>
</tr>
<tr>
<td>ECE 303</td>
<td>Introduction to Electrical Power</td>
</tr>
<tr>
<td>ECE 403</td>
<td>Power Electronics</td>
</tr>
<tr>
<td>ECE 471</td>
<td>Introduction to Solar Cells</td>
</tr>
<tr>
<td>ECON 447W</td>
<td>Natural Resource and Environmental Economics</td>
</tr>
<tr>
<td>EET 340</td>
<td>Transmission Networks</td>
</tr>
<tr>
<td>EET 370T</td>
<td>Energy and the Environment</td>
</tr>
<tr>
<td>EET 485</td>
<td>Electrical Power Systems</td>
</tr>
<tr>
<td>ENMA 301</td>
<td>Introduction to Engineering Management</td>
</tr>
<tr>
<td>ENMA 302</td>
<td>Engineering Economics</td>
</tr>
<tr>
<td>MAE 411</td>
<td>Mechanical Engineering Power Systems Theory and Design</td>
</tr>
<tr>
<td>MAE 413</td>
<td>Energy Conversion</td>
</tr>
<tr>
<td>MAE 416</td>
<td>Introduction to Solar Energy Engineering</td>
</tr>
<tr>
<td>MET 300</td>
<td>Thermodynamics</td>
</tr>
<tr>
<td>MET 450</td>
<td>Energy Systems</td>
</tr>
<tr>
<td>MET 471</td>
<td>Nuclear Systems I</td>
</tr>
<tr>
<td>OSES 415</td>
<td>Waves and Tides</td>
</tr>
<tr>
<td>PHYS 415</td>
<td>Introduction to Nuclear and Particle Physics</td>
</tr>
</tbody>
</table>

One course relevant to energy engineering from the student’s major can also be used as a minor course with the approval of the minor coordinator.

Environmental Issues and Management Interdisciplinary Minor

Sean Banaee, 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 350</td>
<td>Environmental Pollution and Control</td>
</tr>
<tr>
<td>CEE 458</td>
<td>Sustainable Development</td>
</tr>
<tr>
<td>ECON 435</td>
<td>Health Economics: A Global Perspective</td>
</tr>
<tr>
<td>ECON 447W</td>
<td>Natural Resource and Environmental Economics</td>
</tr>
<tr>
<td>ENVH 402W</td>
<td>Environmental and Occupational Health Administration and Law</td>
</tr>
<tr>
<td>ENVH 301</td>
<td>Principles of Environmental Health Science</td>
</tr>
<tr>
<td>ENVH 420</td>
<td>Communicable Diseases</td>
</tr>
<tr>
<td>ENVH 421</td>
<td>Food Safety</td>
</tr>
<tr>
<td>ENVH 422</td>
<td>Water and Wastewater Technology</td>
</tr>
<tr>
<td>GEOG 305</td>
<td>World Resources</td>
</tr>
<tr>
<td>GEOG 306T</td>
<td>Hazards: Natural and Technological</td>
</tr>
<tr>
<td>GEOG 400W</td>
<td>Seminar in Geography</td>
</tr>
<tr>
<td>GEOG 420</td>
<td>Marine Geography</td>
</tr>
<tr>
<td>GEOG 422W</td>
<td>Coastal Geography</td>
</tr>
<tr>
<td>OSES 302</td>
<td>Environmental Geology</td>
</tr>
<tr>
<td>OSES 310</td>
<td>Global Earth Systems</td>
</tr>
<tr>
<td>PAS 300</td>
<td>Foundations of Public Service</td>
</tr>
<tr>
<td>PHIL 344E</td>
<td>Environmental Ethics</td>
</tr>
</tbody>
</table>

Energy Engineering Interdisciplinary Minor

Sandeep Kumar, Department of Civil and Environmental Engineering, Coordinator

This interdisciplinary minor is for students who would like to learn about energy engineering fundamentals, socio-environmental impacts of energy systems, and novel energy engineering technologies. The minor will enhance students’ abilities to integrate knowledge from different disciplines with concepts used in energy engineering and offer students the opportunity to be recognized for study in this growing interdisciplinary field.
Health and Wellness Interdisciplinary Minor
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 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 understanding 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 3
- **HLSC 405** Interprofessional Study Abroad on Global Health 1-3
- **HPE 317** Human Growth & Motor Development 3
- **HPE 400** Management Skills for Teaching Health and Physical Education 3
- **HPE 402** Methods and Materials in Health Education 3
- **HPE 409** Physiology of Exercise 3
- **HPE 430** Nutrition and Fitness Education 3
- **HMSV 341** Introduction to Human Services 3
- **HMSV 491** Family Guidance 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** Sociology of Health and Wellbeing 3
- **SPED 313** Fundamentals of Human Growth and Development: Birth through Adolescence

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
- **CPRJ 402** Transportation Economics 3
- **CPRJ 454W** Economic Development 3
- **ENGL 380** Reporting and News Writing I 3
- **ENGL 382** Reporting News for Television and Digital Media 3
- **ENVH 301** Principles of Environmental Health Science 3
- **ENVH 402W** Environmental and Occupational 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 Technology Survey 3
- **OPMT 303** Operations Management 3
- **PHIL 355E** Cybersecurity 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
- **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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 435W</td>
<td>Modern Architecture</td>
<td>3</td>
</tr>
<tr>
<td>CHP 415W</td>
<td>Critical Issues in Public/Community Health</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 325</td>
<td>Women and Crime</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 355</td>
<td>Crime and the Community</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 441</td>
<td>Drugs and Society</td>
<td>3</td>
</tr>
<tr>
<td>ECON 402</td>
<td>Transportation Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 445W</td>
<td>Urban Economics</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 310</td>
<td>Geography of the City</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 411</td>
<td>Urban and Regional Planning</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 412</td>
<td>Cities of the World</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 431</td>
<td>Community Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 433</td>
<td>Camp Administration</td>
<td>3</td>
</tr>
<tr>
<td>SOC/CRJS 444</td>
<td>Community Justice</td>
<td>3</td>
</tr>
</tbody>
</table>

**World Cultures: Values and Visions Interdisciplinary Minor**

Lee Slater, Department of World Languages and Cultures, 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUMN 304</td>
<td>Digging Up the Past</td>
<td>3</td>
</tr>
<tr>
<td>HUMN 305</td>
<td>North American Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>COMM 400W</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 371W</td>
<td>Communication Across Cultures</td>
<td>3</td>
</tr>
<tr>
<td>FR 320</td>
<td>Contemporary France through the Media</td>
<td>3</td>
</tr>
<tr>
<td>FR 438</td>
<td>Studies in Twentieth-Century French Literature</td>
<td>3</td>
</tr>
<tr>
<td>FR 469</td>
<td>A History of French Cinema</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 451</td>
<td>Europe</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 452</td>
<td>Africa</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 453</td>
<td>Asia</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 455</td>
<td>The Middle East</td>
<td>3</td>
</tr>
<tr>
<td>IT 425</td>
<td>Information Systems for International Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 361</td>
<td>International Business Operations</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 411</td>
<td>Multi-National Marketing</td>
<td>3</td>
</tr>
<tr>
<td>POLS 325W</td>
<td>World Politics</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 420</td>
<td>Cross-Cultural Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 320</td>
<td>Spanish Culture and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 471</td>
<td>Hispanic Women Authors</td>
<td>3</td>
</tr>
<tr>
<td>WCS 307</td>
<td>Understanding European Culture through Film</td>
<td>3</td>
</tr>
</tbody>
</table>

**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

- GEOG 453 Asia
- 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
- HIST 316 Cold War in History
- POLS 314 European Politics
- POLS 332W Europe in World Affairs
- WCS/FR/GER 410 Berlin-Paris: Crucibles of European Ideas

**Latin American Focus**

Select two of the following: 6

- GEOG 454W Latin America
- HIST 373 U.S.-Latin American Relations
- HIST 470 Struggle for Democracy and Development in 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 may be used to meet this requirement but must be from outside of and not required by the student's major and college. Study abroad courses, 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, History, Music, Philosophy, Theatre, and World Languages and Cultures. 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 Student Success Advisor (for online students), 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. 102)
- American Studies (p. 97)
- Art History (p. 104)
- Asian Studies (p. 114)
- Chinese Studies (p. 174)
- Communication (p. 119)
- Criminal Justice (p. 164)
- Dance (p. 122)
- English (p. 129)
- European Studies (p. 173)
- Film and Video Studies (p. 98)
- Geography (p. 161)
- Geography—Environment and Resources Specialization (p. 161)
- History (p. 133)
- Holocaust and Genocide Studies (p. 99)
- International Studies (p. 145)
- Japanese (p. 174)
- Jewish Studies (p. 98)
- Latin American Studies (p. 173)
- Middle Eastern Studies (p. 98)
- Music Composition (p. 155)
- Music History (p. 155)
- Music Performance (p. 155)
- Philosophy (p. 158)
- Philosophy—Applied Ethics Specialization (p. 158)
- Philosophy—Religious Studies Specialization (p. 158)
- Philosophy—Political and Legal Studies Specialization (p. 158)
- Political Science (p. 161)
- Political Science—Public Law Specialization (p. 161)
- Sociology (p. 164)
- Sociology—Social Welfare Specialization (p. 164)
- Studio Arts (p. 107)
- Theatre (p. 124)
- Women’s Studies (p. 167)
- World Languages and Cultures (p. 167)
  - French
  - German
  - Spanish

**Business**
- Accounting (p. 187)
- Business Administration (p. 186)
- Business Analytics (p. 189)
- Economics (p. 179)
- Financial Management (p. 192)
- Financial Management - Real Estate (p. 192)
- Financial Management - Risk Management and Insurance (p. 192)
- Information Systems and Technology (p. 195)
- International Business (p. 198)
- Management (p. 199)
- Marketing (p. 202)
- Maritime and Supply Chain Management (p. 201)
- Military Leadership (p. 203)
- Public Service (p. 186)

**Education**
- Addiction Prevention and Treatment (p. 211)
- Coaching Education (p. 217)
- Exercise Science (p. 217)
- Fashion Merchandising (p. 221)
- Health Education (p. 217)
- Human Services (p. 210)
- Marketing Education (p. 224)
- Park, Recreation and Tourism Management (p. 217)
- Secondary Education (professional education requirements) (p. 229)
- Special Education (p. 209)
- Speech-Language Pathology and Audiology (p. 207)
- Sport Management (p. 217)
- Therapeutic Recreation (p. 217)
- Training and Development (p. 221)

**Engineering and Technology**
- Aerospace Engineering (p. 258)
- Civil Engineering (p. 241)
- Civil Engineering Technology—Construction (p. 255)
- Computer Engineering (p. 245)
- Electrical Engineering (p. 245)
- Electrical Engineering Technology (p. 255)
- Engineering Management (http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/engineeringmanagementsystemsengineering/#engineeringmgmtminor)
- Environmental Engineering (p. 242)
- Global Engineering (p. 238)
- Marine Engineering (p. 255)
- Mechanical Engineering–Mechanics (p. 258)
- Mechanical Engineering–Thermal Sciences (p. 258)
- Mechanical Engineering Technology (p. 255)
- Military Leadership (p. 261)
- Modeling and Simulation (p. 259)
- Motorsports Engineering (p. 258)

**Health Sciences**
- Community Health (p. 269)
- Environmental Health (p. 265)
- Medical Laboratory Science (p. 277)
- Occupational Safety (p. 266)

**Sciences**
- Biology (p. 292)
- Chemistry (p. 298)
- Computer Science (p. 303)
- Mathematics–Actuarial Mathematics Option (p. 307)
- Mathematics–Applied Mathematics Option (p. 307)
- Mathematics–Statistics/Biostatistics Option (p. 307)
- Ocean and Earth Science (p. 313)
- Physics (p. 319)
- Psychology (p. 322)
- Web Programming (p. 303)

**Interdisciplinary Minors**
- Administrative Leadership and Ethics for Professional Roles (p. 85)
- Biomedical Engineering (p. 85)
- Children’s Rights (p. 85)
- Conservation Leadership (p. 86)
- Cybercrime (p. 86)
- Cybersecurity (p. 86)
• The Designed World (p. 87)
• Energy Engineering (p. 87)
• Environmental Issues and Management (p. 87)
• Health and Wellness (p. 88)
• The impact of Technology (p. 88)
• The Urban Community (p. 88)
• World Cultures: Values and Visions (p. 89)
<table>
<thead>
<tr>
<th>ODU</th>
<th>VCCS</th>
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<tbody>
<tr>
<td><strong>Written Communication Skills (6 credits)</strong></td>
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</tr>
<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
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<tr>
<td>ENGL 211C</td>
<td>English Composition</td>
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<tr>
<td>ENGL 231C</td>
<td>Introduction to Technical Writing</td>
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<tr>
<td><strong>Oral Communication Skills (0-3 credits)</strong></td>
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</tr>
<tr>
<td>COMM 101R</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>COMM 103R</td>
<td>Voice and Diction</td>
</tr>
<tr>
<td>COMM 112R</td>
<td>Introduction to Interpersonal Communication</td>
</tr>
<tr>
<td>DANC/THEA 152R</td>
<td>Acting One</td>
</tr>
<tr>
<td>Requirement can also be met by approved course in the major.</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematical Skills (3 credits)</strong></td>
<td></td>
</tr>
<tr>
<td>MATH 101M</td>
<td>An Introduction to Mathematics for Critical Thinking</td>
</tr>
<tr>
<td>MATH 102M/103M</td>
<td>College Algebra</td>
</tr>
<tr>
<td>MATH 162M</td>
<td>Precalculus I</td>
</tr>
<tr>
<td>MATH 163</td>
<td>Precalculus II</td>
</tr>
<tr>
<td>MATH 166</td>
<td>Precalculus I and II</td>
</tr>
<tr>
<td>STAT 130M</td>
<td>Elementary Statistics</td>
</tr>
<tr>
<td><strong>Language and Culture Skills (0-6 credits)</strong></td>
<td></td>
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<tr>
<td>ARAB 111F</td>
<td>Beginning Arabic</td>
</tr>
<tr>
<td>CHIN 111F</td>
<td>Beginning Chinese</td>
</tr>
<tr>
<td>FR 101F &amp; FR 102F</td>
<td>Beginning French I and Beginning French II</td>
</tr>
<tr>
<td>GER 101F &amp; GER 102F</td>
<td>Beginning German I and Beginning German II</td>
</tr>
<tr>
<td>HEBR 111F</td>
<td>Beginning Hebrew I</td>
</tr>
<tr>
<td>ITAL 101F &amp; ITAL 102F</td>
<td>Beginning Italian I and Beginning Italian II</td>
</tr>
<tr>
<td>JAPN 111F</td>
<td>Beginning Japanese</td>
</tr>
<tr>
<td>LATN 101F &amp; LATN 102F</td>
<td>Beginning Latin I and Beginning Latin II</td>
</tr>
<tr>
<td>PRTG 101F &amp; PRTG 102F</td>
<td>Beginning Portuguese I and Beginning Portuguese II</td>
</tr>
<tr>
<td>RUS 101F &amp; RUS 102F</td>
<td>Beginning Russian I and Beginning Russian II</td>
</tr>
<tr>
<td>SPAN 101F</td>
<td>Beginning Spanish I</td>
</tr>
<tr>
<td>SPAN 102F</td>
<td>Beginning Spanish II</td>
</tr>
<tr>
<td>Language and Culture Skills I and II (LC 1REQ and 2REQ)</td>
<td>VTN 101 and 102, GRE 101 and 102, HIN 101 and 102, KOR 101 and 102, ASL 101 and 102</td>
</tr>
<tr>
<td><strong>Information Literacy and Research (0-3 credits)</strong></td>
<td></td>
</tr>
<tr>
<td>IT 150G</td>
<td>Basic Information Literacy and Research</td>
</tr>
<tr>
<td>CS 120G</td>
<td>Introduction to Information Literacy and Research</td>
</tr>
<tr>
<td>STEM 251G</td>
<td>Computer Literacy: Communication and Information</td>
</tr>
<tr>
<td>Requirement can also be met by approved course in the major.</td>
<td></td>
</tr>
<tr>
<td><strong>Impact of Technology (0-3 credits)</strong></td>
<td></td>
</tr>
<tr>
<td>Impact of Technology (1REQ)</td>
<td>ADJU 171, ADJ 172, or CSC 155</td>
</tr>
<tr>
<td><strong>Literature Way of Knowing (3 credits)</strong></td>
<td></td>
</tr>
<tr>
<td>ENGL 112L</td>
<td>Introduction to Literature</td>
</tr>
<tr>
<td>ENGL 114L</td>
<td>American Writers, American Experiences</td>
</tr>
<tr>
<td>WCS 100L</td>
<td>Introduction to World Literatures and Cultures</td>
</tr>
<tr>
<td>Literature Way of Knowing (LIT 1REQ)</td>
<td>ENG 236, 237, 241, 242, 243, 244, 245, 246, 251, 252, 253, 254, 255, 256, 267, or 268</td>
</tr>
<tr>
<td><strong>Human Creativity Way of Knowing (3 credits)</strong></td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
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</tr>
<tr>
<td>ARTH 121A</td>
<td>Introduction to the Visual Arts</td>
</tr>
<tr>
<td>ARTS 122A</td>
<td>Visual Communication</td>
</tr>
<tr>
<td>COMM 270A &amp; THEA 270A</td>
<td>Film Appreciation and Film Appreciation</td>
</tr>
<tr>
<td>THEA 241A</td>
<td>The Theatre Experience</td>
</tr>
<tr>
<td>MUSC 264A</td>
<td>Music in History and Culture</td>
</tr>
<tr>
<td>DANC 185A</td>
<td>Dance and Its Audience</td>
</tr>
</tbody>
</table>

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 |

Philosophy and Ethics Way of Knowing (0-3 credits)

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.

Interpreting the Past Way of Knowing (3 credits)

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, 122, or 172 |
HIST 105H | Interpreting the African Past | HIS 203 or 204 |

Interpreting the Past Way of Knowing (INTP 1REQ) | HIS 111, 221, or 222 |

Human Behavior Way of Knowing (3 credits)

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, 212, or 281 |
POLS 102S | Introduction to Comparative Government and Politics | PLS 140 |
PSYC 201S | Introduction to Psychology | PSY 111, 200 or 201 |
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 | HUM 210, SSC 205, 210 |

Human Behavior Way of Knowing (HB 1REQ) | HUM 215, PLS 120, SOC 220, 255, SSC 100, 201, 202 |

Nature of Science Way of Knowing (8 credits)

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 |
CHEM 123N & CHEM 124N | Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory | CHM 112 |
OEAS 106N | Introductory Oceanography | GOL 111 |
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Equivalent Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEAS 110N</td>
<td>Earth Science</td>
<td>GOL 110 (required for teacher ed) (Note: A student receiving credit for OEAS 110N cannot receive credit for OEAS 111N)</td>
</tr>
<tr>
<td>OEAS 111N</td>
<td>Physical Geology</td>
<td>GOL 105 (Note: A student receiving credit for OEAS 111N cannot receive credit for OEAS 110N)</td>
</tr>
<tr>
<td>OEAS 112N</td>
<td>Historical Geology</td>
<td>GOL 106</td>
</tr>
<tr>
<td>PHYS 101N</td>
<td>Conceptual Physics</td>
<td>PHY 100 or 101</td>
</tr>
<tr>
<td>PHYS 102N</td>
<td>Conceptual Physics</td>
<td>PHY 102</td>
</tr>
<tr>
<td>PHYS 103N</td>
<td>Introductory Astronomy of the Solar System</td>
<td>NAS 131</td>
</tr>
<tr>
<td>PHYS 104N</td>
<td>Introductory Astronomy of Galaxies and Cosmology</td>
<td>NAS 132</td>
</tr>
<tr>
<td>PHYS 111N</td>
<td>Introductory General Physics</td>
<td>PHY 111 or 201</td>
</tr>
<tr>
<td>PHYS 112N</td>
<td>Introductory General Physics</td>
<td>PHY 112 or 202</td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
<td>PHY 221, 231 or 241</td>
</tr>
<tr>
<td>PHYS 232N</td>
<td>University Physics</td>
<td>PHY 222, 232 or 242</td>
</tr>
<tr>
<td>PHYS 261N &amp; PHYS 262N</td>
<td>Advanced University Physics I and Advanced University Physics II</td>
<td>none</td>
</tr>
<tr>
<td>Nature of Science Way of Knowing (NS REQ)</td>
<td>BIO 106, 107, 114, 120, 201, 202, 207, 278, CHM 126, GOL 112, 205, 207, 225, MAR 121, 122, 201, 202, NAS 101, 102, 110, 111, 112, 120, 125, 130, 131, 132, PHY 130, 132, 141, 150, SCT 111, 112</td>
<td></td>
</tr>
<tr>
<td>Nature of Science Way of Knowing (NS 1REQ)</td>
<td>BIO 150 or BIO 205 + BIO 141 and 142 or BIO 231 and 232</td>
<td></td>
</tr>
</tbody>
</table>

The complete transfer course database is available on the Transfer Student website found at http://www.odu.edu/admission/undergraduate/transfer/transfermation under Future Students.
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, History, Philosophy and Religious Studies, Political Science and Geography, Sociology and Criminal Justice, Women's Studies, and World Languages and Cultures; the F. Ludwig Diehn School of Music; 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; the Institute for Jewish Studies and Interfaith Understanding; the Social Science Research Center; and the Community Music Division.


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 linked undergraduate/graduate programs and graduate degree programs. Linked programs allow students to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree, which may allow students to earn both a B.A. or B.S. and an M.A. in five years. Linked programs are available in applied linguistics, English, history, international studies, humanities, and lifespan and digital communication; concentrations in humanities are available in communication, geography, individualized interdisciplinary studies, philosophy, visual arts, and women's studies. A linked B.A. or B.S. to M.B.A. program is available in cooperation with the Strome College of Business.


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 World Languages and Cultures 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 (IEPA)

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:

<table>
<thead>
<tr>
<th>Designated Course Listings</th>
<th>AMST 300</th>
<th>Perspectives in American Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select at least one course in the arts or the humanities from the following:</td>
<td>ARTH 325</td>
<td>American Art Before 1865</td>
</tr>
<tr>
<td></td>
<td>ARTH 326</td>
<td>American Art Since 1865</td>
</tr>
<tr>
<td></td>
<td>ENGL 340</td>
<td>American Drama</td>
</tr>
<tr>
<td></td>
<td>ENGL 342</td>
<td>Southern Literature</td>
</tr>
<tr>
<td></td>
<td>ENGL 345</td>
<td>American Literature to 1860</td>
</tr>
<tr>
<td></td>
<td>ENGL 346</td>
<td>American Literature Since 1860</td>
</tr>
<tr>
<td></td>
<td>ENGL 447</td>
<td>The American Novel to 1920</td>
</tr>
<tr>
<td></td>
<td>ENGL 448</td>
<td>The American Novel 1920 to Present</td>
</tr>
<tr>
<td></td>
<td>ENGL 465W</td>
<td>African American Literature</td>
</tr>
<tr>
<td></td>
<td>ENGL 466W</td>
<td>Asian American Literature</td>
</tr>
<tr>
<td></td>
<td>MUSC 460</td>
<td>History of Jazz</td>
</tr>
</tbody>
</table>

Select at least one course in the social sciences from the following:

<table>
<thead>
<tr>
<th>Designated Course Listings</th>
<th>COMM 340</th>
<th>Media and Popular Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>COMM 434</td>
<td>African-American Rhetoric Voices of Liberation</td>
</tr>
<tr>
<td></td>
<td>COMM 473</td>
<td>Television and Society</td>
</tr>
<tr>
<td></td>
<td>COMM 479W</td>
<td>American Film History</td>
</tr>
<tr>
<td></td>
<td>COMM 481</td>
<td>The Documentary Tradition</td>
</tr>
<tr>
<td></td>
<td>GEOG 350</td>
<td>Geography of the United States and Canada</td>
</tr>
<tr>
<td></td>
<td>HIST 345</td>
<td>Native American History</td>
</tr>
<tr>
<td></td>
<td>HIST 346</td>
<td>Colonial and Revolutionary America</td>
</tr>
<tr>
<td></td>
<td>HIST 348</td>
<td>The Early Republic, 1787-1850</td>
</tr>
<tr>
<td></td>
<td>HIST 351</td>
<td>The Civil War and Reconstruction</td>
</tr>
<tr>
<td></td>
<td>HIST 353</td>
<td>Robber Barons, Reformers, and Radicals: The US Gilded Age and Progressive Era</td>
</tr>
<tr>
<td></td>
<td>HIST 355</td>
<td>The United States, 1945-1991</td>
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<td></td>
<td>HIST 357</td>
<td>The United States in the 1960s</td>
</tr>
<tr>
<td></td>
<td>HIST 361</td>
<td>African-American History to 1865</td>
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<tr>
<td></td>
<td>HIST 362</td>
<td>African-American History Since 1865</td>
</tr>
<tr>
<td></td>
<td>HIST 363</td>
<td>Women in U.S. History</td>
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<tr>
<td></td>
<td>POLS 312</td>
<td>American Political Thought</td>
</tr>
<tr>
<td></td>
<td>POLS 407</td>
<td>American Presidency</td>
</tr>
<tr>
<td></td>
<td>POLS 408</td>
<td>American Constitutional Law and Politics I</td>
</tr>
<tr>
<td></td>
<td>POLS 409</td>
<td>American Constitutional Law and Politics II</td>
</tr>
<tr>
<td></td>
<td>POLS 410</td>
<td>African American Politics</td>
</tr>
<tr>
<td></td>
<td>POLS 412</td>
<td>Politics of the Civil Rights Movement</td>
</tr>
<tr>
<td></td>
<td>POLS 415</td>
<td>Women and Politics in America</td>
</tr>
<tr>
<td></td>
<td>SOC 320</td>
<td>Social Inequality</td>
</tr>
<tr>
<td></td>
<td>SOC 340</td>
<td>Sociology of Women</td>
</tr>
<tr>
<td></td>
<td>WMST 302W</td>
<td>Dimensions of Diversity: Intersectionality Among Women</td>
</tr>
</tbody>
</table>
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, Latin American Studies, and World Cultures: Values and Visions

See the Minors section of the Department of World Languages and Cultures (p. 167).

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:

1. COMM 337 Model League of Arab States 3
2. COMM/MIDE 405 Communication and Culture in the Middle East 3
3. MIDE 395 Topics in Middle Eastern Studies 3
4. MIDE 495 Topics in Middle Eastern Studies 3
5. SOC 353 Sociology of the Middle East 3
6. ARAB 311 Advanced Arabic Language and Culture I 3
7. ARAB 312 Advanced Arabic Language and Culture II 3
8. ARAB 395 Topics in Arabic 1-6
9. REL 311 Hebrew Bible/Old Testament 3
10. REL 312 New Testament 3
11. REL 350 Judaism 3
12. REL 351 Christianity 3
13. REL 352 Islam 3
14. REL 400 Sacred Texts of Islam 3
15. 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
   - FR 469 A History of French Cinema
   - GER 445 German Cinema I
   - SPAN 469 Hispanic Film
   - WMST 495 Topics in Women's Studies
   - Or approved topics courses

3. Twelve hours chosen from the courses listed above or from:
   - COMM 479W American Film History
   - THEA 479W American Film History
   - COMM 481 The Documentary Tradition
   - THEA 346 Screenwriting I
   - COMM 346 Screenwriting I
   - THEA 370 The Video Project
   - COMM 370 The Video Project
   - THEA 380 Documentary Production I
   - COMM 380 Documentary Production I
   - THEA 480 Documentary Production II
   - COMM 480 Documentary Production II
   - Or approved additional courses

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 and three approved Jewish Studies electives (nine hours) at the 300-level or above, for a total of 12 credits. 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.
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.

Minor in Holocaust and Genocide Studies

The minor in Holocaust and Genocide Studies provides students with an interdisciplinary examination into the causes and effects of the Holocaust and other genocides, offering a deeper understanding of antisemitism, racism, prejudice, and other extreme hatreds that led to the mass annihilation of peoples in the past and present. It explores the impact, trauma and memory of such destruction through exploration via historical, artistic, musical, literary, cultural, geographical, theatrical, philosophical, and social scientific contexts. The minor increases student awareness of genocidal atrocities around the globe, asking that they bear witness to the voices of those who have lived through such catastrophic events, with the goal of carrying the witness forward and encouraging them to be active in the prevention of genocide in the future.

The minor requires completion of 12 credit hours at the 300/400 level.

Requirements for the minor are as follows.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>JST 300</td>
<td>Holocaust and Genocide Studies (Core Course)</td>
<td>3</td>
</tr>
<tr>
<td>Select three courses from the following:</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>COMM 456</td>
<td>Organizations and Social Influence</td>
<td></td>
</tr>
<tr>
<td>CRJS 350</td>
<td>Victimology</td>
<td></td>
</tr>
<tr>
<td>CRJS 355</td>
<td>Crime and the Community</td>
<td></td>
</tr>
<tr>
<td>CRJS 401</td>
<td>Understanding Violence</td>
<td></td>
</tr>
<tr>
<td>CRJS 427</td>
<td>Violence Against Women</td>
<td></td>
</tr>
<tr>
<td>ENGL 395</td>
<td>Topics in English (Human Rights and World Literature)</td>
<td></td>
</tr>
<tr>
<td>ENGL 395</td>
<td>Topics in English (American Literature and Queer of Color Critique)</td>
<td></td>
</tr>
<tr>
<td>ENGL 464W</td>
<td>Native American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGL 465W</td>
<td>African American Literature</td>
<td></td>
</tr>
<tr>
<td>GER 455</td>
<td>Germany 1900-1945: From High Culture to Holocaust</td>
<td></td>
</tr>
<tr>
<td>HIST 370</td>
<td>Africa and the Atlantic Slave Trade</td>
<td></td>
</tr>
<tr>
<td>HIST 391</td>
<td>Paris/Auschwitz Study Abroad</td>
<td></td>
</tr>
<tr>
<td>HIST 392</td>
<td>The Holocaust and Vichy France</td>
<td></td>
</tr>
<tr>
<td>HIST 393</td>
<td>Studies in Jewish History</td>
<td></td>
</tr>
<tr>
<td>HIST 396</td>
<td>Topics in History (Holocaust and Memory)</td>
<td></td>
</tr>
<tr>
<td>HIST 402W</td>
<td>Senior Seminar in History (Holocaust Historiography)</td>
<td></td>
</tr>
<tr>
<td>HIST 420</td>
<td>Fascism in Europe</td>
<td></td>
</tr>
<tr>
<td>HIST 477</td>
<td>Africa and the West from the Era of the Slave Trade through Modern Times</td>
<td></td>
</tr>
<tr>
<td>HIST 493</td>
<td>Holocaust and Film: Representing the Unimaginable in the Visual Turn</td>
<td></td>
</tr>
<tr>
<td>JST 495</td>
<td>Topics in Jewish Studies</td>
<td></td>
</tr>
<tr>
<td>JST 497</td>
<td>Research Project in Jewish Studies</td>
<td></td>
</tr>
<tr>
<td>SOC 320</td>
<td>Social Inequality</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 12

Students must earn a grade of C (2.00) or better in all courses taken for the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

B.A. or B.S. to M.B.A. (Master of Business Administration) Linked Program

The linked BA/MBA or BS/MBA program is an early entry to the MBA program of study. The early-entry program is designed for well qualified non-business undergraduate ODU students to start their MBA program prior to completing their undergraduate degree. Well qualified non-business undergraduate students may take MBA-level courses as early as three semesters prior to graduation and count up to 12 graduate credits toward their undergraduate degree. Students participating in the early-entry program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Early-entry program students should carefully consider their undergraduate degree program requirements when planning their course of study. Students in the early-entry program work in close consultation with the MBA Program Office to develop an individualized plan of study based on the required coursework outlined 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)

Students who have done exceptionally well in their undergraduate work may qualify for a GMAT waiver. These candidates will have:

1. Completed all lower-level general education requirements
2. Completed at least 24 credit hours at ODU with a cumulative GPA of at least 3.5
3. Achieved junior standing

**Admissions Procedure**

Students interested in the early-entry program should complete the GMAT at least two semesters prior to the semester in which they wish to enroll. Applications to the MBA program should be submitted online following published deadlines in order to begin coursework in the desired semester. When completing the application for admission, students need to select an official admission date that is the semester immediately following their anticipated undergraduate graduation.

Students interested in the program should contact the MBA Program Office as early as possible to discuss their plans for early entry. Once admitted to the program, the MBA program manager will act as the student’s co-advisor, along with the chief departmental advisor or chief discipline advisor in the student's undergraduate major. The MBA Program Office is located in 1026 Constant Hall. The phone number is 757-683-3585 and email is mbainfo@odu.edu.

**Requirements for the M.B.A.**

Admitted students may begin to complete courses from the MBA pre-core and/or core as soon as three semesters prior to anticipated undergraduate graduation. Twelve graduate credit hours can count toward the undergraduate degree and can meet upper-level General Education requirements. Students will work closely with their undergraduate advisor.
to confirm what MBA coursework can be used for the fulfillment of their undergraduate degree requirements.

The entire program for a general MBA is 45 credit hours for non-business majors. Courses will be available online and on main campus except for the pre-core, which is only offered online. Those students required to complete the pre-core must complete all pre-core requirements before being allowed to progress to any core courses.

Students must satisfactorily complete:

**MBA Pre-Core**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA 600</td>
<td>Introduction to Statistics</td>
<td>1</td>
</tr>
<tr>
<td>MBA 601</td>
<td>Introduction to Managerial Economics</td>
<td>1</td>
</tr>
<tr>
<td>MBA 602</td>
<td>Introduction to Finance</td>
<td>1</td>
</tr>
<tr>
<td>MBA 603</td>
<td>Introduction to Accounting</td>
<td>1</td>
</tr>
<tr>
<td>MBA 604</td>
<td>Introduction to Information Management</td>
<td>1</td>
</tr>
</tbody>
</table>

**MBA Core**

*Either ACCT 609 or FIN 616 is required.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 609</td>
<td>Managerial Accounting</td>
<td>2</td>
</tr>
<tr>
<td>ACCT 611</td>
<td>Financial Accounting</td>
<td>2</td>
</tr>
<tr>
<td>BNAL 606</td>
<td>Statistics for Managers</td>
<td>2</td>
</tr>
<tr>
<td>BNAL 610</td>
<td>Fundamentals of Business Analytics</td>
<td>2</td>
</tr>
<tr>
<td>ECON 607</td>
<td>Managerial Economics</td>
<td>2</td>
</tr>
<tr>
<td>ECON 618</td>
<td>Global Macroeconomics</td>
<td>2</td>
</tr>
<tr>
<td>FIN 613</td>
<td>Financial Management</td>
<td>2</td>
</tr>
<tr>
<td>FIN 616</td>
<td>Investments and Portfolio Management</td>
<td>2</td>
</tr>
<tr>
<td>FIN 619</td>
<td>Business Law and Ethics</td>
<td>2</td>
</tr>
<tr>
<td>INBU 620</td>
<td>International Business Issues</td>
<td>2</td>
</tr>
<tr>
<td>IT 614</td>
<td>Information and Knowledge Management</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 605</td>
<td>Leadership Dynamics</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 612</td>
<td>Managing in Contemporary Organizations</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 621</td>
<td>Strategic Management</td>
<td>4</td>
</tr>
<tr>
<td>MKTG 608</td>
<td>Fundamentals of Contemporary Marketing</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 617</td>
<td>Marketing Strategy</td>
<td>2</td>
</tr>
<tr>
<td>OPMT 615</td>
<td>Operations &amp; Supply Chain Management</td>
<td>2</td>
</tr>
<tr>
<td>Elective Credit Hours</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Total Hours 45

*Each core course is offered once per academic year in a specific semester both online and on-campus to maximize opportunity for degree completion, subject to sufficient demand.

**Graduate Writing Proficiency**

Students in the MBA program are required to meet the Old Dominion University writing requirement. This can be achieved in one of two ways: (1) earn a raw score of 4.5 or above on the Analytical Writing portion of the GMAT/GRE or (2) successfully complete MBA 621: Effective Business Writing.

**Continuance Policy**

To remain in good academic standing after admission to the program, students must maintain a minimum cumulative grade point average of 3.0 in all graduate coursework attempted at the University. Students who fall below this minimum standard will have 12 credit hours to remedy this deficiency.

Further, students may be removed from the program when they earn (1) a grade of C or lower in two courses in the pre-core, or (2) a grade of C or lower in two courses in the core and elective coursework, or (3) a failing grade (F) in any course.

**B.A. or B.S. to M.P.A. (Master of Public Administration) Linked Program**

The linked B.A./M.P.A. or B.S./M.P.A. program provides qualified Old Dominion University undergraduate students with the opportunity to earn a master's degree in public administration while taking credits in the M.P.A. program as an undergraduate student. The program is designed for highly motivated students with the desire to immediately continue their education after the bachelor's degree. The program is especially relevant to individuals seeking to work (or currently working) in the public or nonprofit sectors, but is suitable for students from any undergraduate major.

Graduate courses may be taken during the fall and spring semester of the student's senior undergraduate year. Up to 12 graduate credits can count toward both the undergraduate and graduate degree and can meet upper-level General Education requirements. After receiving the undergraduate degree, a student will continue with the M.P.A. program, taking M.P.A. courses until completing the required 39 credit hours. Students in the linked program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree).

**Admission Requirements**

A potential candidate will have:

1. Completed all lower level general education requirements
2. Achieved a cumulative GPA of at least 3.0 at the end of the junior year

Requirements for admission to the graduate program can be found in the School of Public Service section of the Graduate Catalog. For additional information, please contact the School of Public Service in the Strome College of Business.

**Career Development Services**

Residing within the College of Arts and Letters, is a full-time, full-service Career Development Services (CDS) with staff dedicated to working with Arts and Letters students and alumni. The Arts and Letters CDS staff is available to offer a full array of career assistance, resources, and experience to connect students with resources that will aid in identifying, researching and exploring possible careers and opportunities to link academic and career interests.

CDS 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 21 credit hours of core coursework, 12 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...
Bachelor of Science and Bachelor of Arts – African American and African Studies Major

Lower-Division General Education Requirements

<table>
<thead>
<tr>
<th>Written Communication *</th>
<th>ENGL 110C English Composition</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ENGL 211C English Composition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or ENGL 221C Introduction to Writing in Business, Education and Social Sciences</td>
<td></td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>STAT 130M ** Elementary Statistics (required)</td>
<td>0-12</td>
<td></td>
</tr>
<tr>
<td>Language and Culture ***</td>
<td>0-3</td>
<td></td>
</tr>
<tr>
<td>Information Literacy and Research ****</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Interpreting the Past (met in the major with HIST 105H)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Impact of Technology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Human Behavior ****</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td>35-50</td>
<td></td>
</tr>
</tbody>
</table>

* 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.
**** 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.)

| AAST 100S Introduction to African American Studies | 3 |
| HIST 105H Interpreting the African Past | 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 |
| SOC 320 Social Inequality | 3 |
| Total Hours | 21 |

* Grade of C or better required

Upper-Division Electives (B.A. and B.S., 12 credit hours, 300 and 400 level courses)

Students majoring in African American and African Studies must earn a minimum of 12 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. Courses may be selected from among those listed by category below. 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 368 Internship | 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/SOC 452 Diversity in Criminal Justice Organizations | 3 |
| 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 439 International Relations of African States | 3 |
| POLS 412 Politics of the Civil Rights Movement | 3 |
| POLS 470 African Americans and Foreign Affairs | 3 |
| PSYC 460 Psychology of African Americans | 3 |
| SOC 323 Sociology of Minority Families | 3 |
| SOC 426 The Sociology of Minority Groups | 3 |
| SOC/CRJS 444 Community Justice | 3 |

Upper-Division Humanities Courses

| AAST 368 Internship | 3 |
| AAST 395 Topics in African American Studies | 3 |
| AAST 396 Topics in African American Studies | 3 |
| COMM 332 Making African-American Cinema | 3 |
| COMM 434 African-American Rhetoric Voices of Liberation | 3 |
| ENGL 465W African American Literature | 3 |
| HIST 361 African-American History to 1865 | 3 |
| HIST 362 African-American History Since 1865 | 3 |
| HIST 370 Africa and the Atlantic Slave Trade | 3 |
| HIST 455 African-American Historiography | 3 |
| HIST 475 History of Modern Africa | 3 |
| HIST 477 Africa and the West from the Era of the Slave Trade through Modern Times | 3 |
| MUSC 460 History of Jazz | 3 |
| WMST 302W Dimensions of Diversity: Intersectionality Among Women | 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 |
| GEOG 452 Africa | 3 |
| HIST 370 Africa and the Atlantic Slave Trade | 3 |
| HIST 475 History of Modern Africa | 3 |
| HIST 477 Africa and the West from the Era of the Slave Trade through Modern Times | 3 |
| POLS 316 Politics of Africa | 3 |
| POLS 439 International Relations of African States | 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.

**Requirements for Graduation**

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.

**Four-Year Plan - African American and African Studies Major - BA**

(http://catalog.odu.edu/undergraduate/collegeofartsletters/africanamericanstudies/bafouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Four-Year Plan - African American and African Studies Major - BS**

(http://catalog.odu.edu/undergraduate/collegeofartsletters/africanamericanstudies/bsfouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAST 100S</td>
<td>Introduction to African American Studies</td>
<td>3</td>
</tr>
<tr>
<td>AAST 395</td>
<td>Topics in African American Studies</td>
<td>6</td>
</tr>
<tr>
<td>AAST 396</td>
<td>Topics in African American Studies</td>
<td></td>
</tr>
<tr>
<td>AAST 399</td>
<td>Topics in African American Studies</td>
<td></td>
</tr>
<tr>
<td>COMM 332</td>
<td>Making African-American Cinema</td>
<td></td>
</tr>
<tr>
<td>COMM 434</td>
<td>African-American Rhetoric Voices of Liberation</td>
<td></td>
</tr>
<tr>
<td>ENGL 465W</td>
<td>African American Literature</td>
<td></td>
</tr>
<tr>
<td>HIST 361</td>
<td>African-American History to 1865</td>
<td></td>
</tr>
<tr>
<td>HIST 362</td>
<td>African-American History Since 1865</td>
<td></td>
</tr>
<tr>
<td>HIST 370</td>
<td>Africa and the Atlantic Slave Trade</td>
<td></td>
</tr>
<tr>
<td>HIST 455</td>
<td>African-American Historiography</td>
<td></td>
</tr>
<tr>
<td>HIST 475</td>
<td>History of Modern Africa</td>
<td></td>
</tr>
<tr>
<td>HIST 477</td>
<td>Africa and the West from the Era of the Slave Trade through Modern Times</td>
<td></td>
</tr>
<tr>
<td>MUSC 460</td>
<td>History of Jazz</td>
<td></td>
</tr>
<tr>
<td>WMST 302W</td>
<td>Dimensions of Diversity: Intersectionality Among Women</td>
<td></td>
</tr>
</tbody>
</table>

A minimum of six hours of 300/400 level humanities courses from among the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAST 305</td>
<td>Africa in Transition</td>
</tr>
<tr>
<td>AAST 330</td>
<td>Human Rights and Social Change in Africa</td>
</tr>
<tr>
<td>AAST 395</td>
<td>Topics in African American Studies</td>
</tr>
<tr>
<td>AAST 396</td>
<td>Topics in African American Studies</td>
</tr>
<tr>
<td>AAST 410</td>
<td>Africana Intellectual Thought and Economic Development</td>
</tr>
<tr>
<td>AAST 420W</td>
<td>African American Political and Social Thought</td>
</tr>
<tr>
<td>AAST 490</td>
<td>Senior Seminar</td>
</tr>
<tr>
<td>AAST 495</td>
<td>Topics in African American Studies</td>
</tr>
<tr>
<td>CRJS/SOC 444</td>
<td>Community Justice</td>
</tr>
<tr>
<td>CRJS/SOC 452</td>
<td>Diversity in Criminal Justice Organizations</td>
</tr>
<tr>
<td>CRJS 450</td>
<td>Blacks, Crime and Justice</td>
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<tr>
<td>GEOG 452</td>
<td>Africa</td>
</tr>
<tr>
<td>POLS 309</td>
<td>Race, Culture and Public Policy</td>
</tr>
<tr>
<td>POLS 316</td>
<td>Politics of Africa</td>
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<tr>
<td>POLS 410</td>
<td>African American Politics</td>
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<tr>
<td>POLS 412</td>
<td>Politics of the Civil Rights Movement</td>
</tr>
<tr>
<td>POLS 439</td>
<td>International Relations of African States</td>
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<td>PSYC 460</td>
<td>Psychology of African Americans</td>
</tr>
<tr>
<td>SOC 320</td>
<td>Social Inequality</td>
</tr>
<tr>
<td>SOC 323</td>
<td>Sociology of Minority Families</td>
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</table>
### Bachelor of Arts–Art History Major

**Anne Muraoka, Program Director**

#### Lower-Division General Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following courses:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENGL 211C</td>
<td>English Composition</td>
<td></td>
</tr>
<tr>
<td>ENGL 221C</td>
<td>Introduction to Writing in Business, Education and Social Sciences</td>
<td></td>
</tr>
<tr>
<td>or ENGL 231C</td>
<td>Introduction to Technical Writing</td>
<td></td>
</tr>
<tr>
<td>Oral Communication Skills</td>
<td>3</td>
<td></td>
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<td>Mathematical Skills</td>
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</tr>
<tr>
<td>Language and Culture **</td>
<td>0-12</td>
<td></td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Human Creativity ***</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select one of the following courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM/THEA 270A</td>
<td>Film Appreciation</td>
<td></td>
</tr>
<tr>
<td>DANC 185A</td>
<td>Dance and Its Audience</td>
<td></td>
</tr>
<tr>
<td>MUSC 264A</td>
<td>Music in History and Culture</td>
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<tr>
<td>THEA 241A</td>
<td>The Theatre Experience</td>
<td></td>
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<tr>
<td>Interpreting the Past</td>
<td>3</td>
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<td>Literature</td>
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<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>The Impact of Technology ****</td>
<td>0-3</td>
<td></td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td>38-53</td>
<td></td>
</tr>
</tbody>
</table>

**- Grade of C or better required in both courses and in ENGL 110C before declaring major in Art History.**

**- Proficiency through 202 level in French, German, Italian, Latin or Spanish; note that proficiency is not met by completion of an associate degree.**

---

### Major Courses

**ARTH 150** Global Survey of Art History 3

Select one of the following Art History (ARTH) 200-level Survey courses:

- ARTH 203 Ancient Art
- ARTH 210 Early Modern Art in Europe
- ARTH 230 Twentieth Century Modern Art
- ARTH 351W Research Methods in Art History 3
- ARTH 360 Asian Art 3

**Major Electives**

Select one additional 200-level ARTH Survey course in each of the areas not selected previously: Ancient and Medieval, Early Modern, or Modern and Contemporary.

Select one 300-level ARTH course from each of the following areas: Ancient and Medieval, Early Modern, or Modern and Contemporary.

Select three 400-level ARTH courses.

Select one of the following courses:

- ARTH 481 Capstone
- ARTH 480 Senior Thesis

Select two ARTS electives. 6

**Total Hours** 45

---

### Requirements for Graduation

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 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.

### Electives

Completion of requirements for lower-division general education, upper-division general education and the major would entail 89 to 104 credits toward the 120 credits required for graduation. The remaining credit hours may be met with any university course the student is qualified to take, including additional courses in art.
Four-Year Plan - Art History - BA
(http://catalog.odu.edu/undergraduate/collegeofartsletters/art/arhistory-ba-fouryearplan)
This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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 150 and ARTH 203, ARTH 210 or ARTH 230 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 Graphic Design
- ARTH 350W Art Criticism
- ARTH 351W Research Methods in Art History
- ARTH 435W Modern Architecture
- 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
Agnieszka Whelan, 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. Creative planning and critical analysis of design dynamics are emphasized within these disciplinary course subjects.

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 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 Graphic Design 3
- ARTH 327 History of Photography 3
- ARTH 435W Modern Architecture 3
- ARTS 455 Letterpress Printmaking 3
- COMM 341 Lighting Design for Stage and Film 3
- COMM 349 Costume Design for Stage and Camera 3
- COMM 370 The Video Project 3
- ENGL 371W Communication Across Cultures 3
- ENGL 382 Reporting News for Television and Digital Media 3

Bachelor of Arts–Art Education Major
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 on the Office of Clinical Experiences website, http://odu.edu/oce, and are to be submitted to the art education program director or Art Department chair before being submitted to Office of Clinical Experiences.

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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, http://odu.edu/oce and review the Professional 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 Clinical Experiences.

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 Subject assessment (formerly Praxis II) art content knowledge test 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.

Background Clearance Requirement
Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Students will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes the Old Dominion University 104
FBI fingerprint SP-24 form, the child protective service/social service check, and the sexual offender registry check. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete. Please contact the Office of Clinical Experiences at 757-683-3348 if you have any questions.

**Virginia Board of Education Prescribed Assessments for Licensure**
- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.
- Praxis Subject assessment (formerly Praxis II) art content knowledge (test code 5134), passing score of 158 required

To review more information on the Virginia Board of Education prescribed assessments, visit the Office of Clinical Experiences website, http://odu.edu/ocene.

**Graduation**
Requirements for graduation include 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, 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 Office of Clinical Experiences website at http://odu.edu/ocene.

**Lower-Division General Education**

<table>
<thead>
<tr>
<th>Written Communication Skills</th>
<th><strong>ENGL 110C</strong> English Composition</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following courses:</td>
<td><strong>ENGL 211C</strong> English Composition</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>ENGL 221C</strong> Introduction to Writing in Business, Education and Social Sciences</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>ENGL 231C</strong> Introduction to Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communications Skills</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mathematical Skills</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Language and Culture</td>
<td><strong>0-12</strong></td>
<td></td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Human Creativity</td>
<td><strong>3</strong></td>
<td></td>
</tr>
<tr>
<td>Select one of the following courses:</td>
<td><strong>COMM/THEA 270A</strong> Film Appreciation</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>DANC 185A</strong> Dance and Its Audience</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>MUSC 264A</strong> Music in History and Culture</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>THEA 241A</strong> The Theatre Experience</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting The Past</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Literature</td>
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<td></td>
</tr>
<tr>
<td>The Nature and Science</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Impact of Technology</td>
<td><strong>0-3</strong></td>
<td></td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td><strong>38-53</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Art History Requirements**

| ARTH 150 | Global Survey of Art History | 3 |
| Select one of the following Art History (ARTH) 200-level Survey courses: | **ARTH 203** Ancient Art | 3 |
| | **ARTH 210** Early Modern Art in Europe | 3 |
| | **ARTH 230** Twentieth Century Modern Art | 3 |
| | **ARTH 360** Asian Art | 3 |
| | **ARTH 350W** Art Criticism | 3 |
| **Total Hours** | **12** |

**Studio Art Requirements**

| ARTS 202 | Two-Dimensional Design and Color Theory | 3 |
| ARTS 203 | Three-Dimensional Design | 3 |
| ARTS 204 | Foundational Concepts in Studio Art | 3 |
| ARTS 231 | Drawing I: Fundamentals of Drawing | 3 |
| ARTS 279 | Digital Basics | 3 |
| ARTS 211 | Introduction to Digital Photography | 3 |
| ARTS 241 | Painting I | 3 |
| ARTS 263 | Introduction to Ceramics | 3 |
| ARTS 331 | Drawing II | 3 |
| Select one of the following: | **ARTH 257** Print I: Intaglio and Relief | 3 |
| | **ARTH 258** Print I: Screenprint and Lithography | 3 |
| | **ARTH 259** Print I: Letterpress and Book Arts | 3 |
| | **ARTH 261** Introduction to Sculpture | 3 |
| | **ARTH 281** Weaving and Fibers: Introduction | 3 |
| | **ARTH 291** Metalsmithing and Jewelry: Introduction | 3 |
| **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 | **3** |
| TLED 485 | Teacher Candidate Internship | **12** |
| **Total Hours** | **33** |

- Grade of C or better required.
- **Grade of C or better required.**
**Upper-Division General Education**

Satisfied through the professional education sequence.

**Elective Credit**

Elective credit may be needed to meet the minimum requirement of 120 credit hours.

**Four-Year Plan - Art Education - BA**

(http://catalog.odu.edu/undergraduate/collegeofartsletters/art/arteducation-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
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<tbody>
<tr>
<td>ENGL 110C English Composition *</td>
<td>3</td>
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<tr>
<td>Select one of the following courses:</td>
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<tr>
<td>ENGL 211C English Composition</td>
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</tr>
<tr>
<td>ENGL 221C Introduction to Writing in Business, Education and Social Sciences</td>
<td></td>
</tr>
<tr>
<td>ENGL 231C Introduction to Technical Writing</td>
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</tbody>
</table>

**Oral Communication Skills**

3

**Mathematical Skills**

3

**Language and Culture **

0-12

**Information Literacy and Research**

3

**Human Creativity **

3

**Select one of the following courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 270A Film Appreciation or THEA 270A Film Appreciation</td>
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<tr>
<td>DANC 185A Dance and Its Audience</td>
<td></td>
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<td>MUSC 264A Music in History and Culture</td>
<td></td>
</tr>
<tr>
<td>THEA 241A The Theatre Experience</td>
<td></td>
</tr>
</tbody>
</table>

**Interpreting the Past**

3

**Literature**

3

**Philosophy and Ethics**

3

**The Nature of Science**

8

**Impact of Technology ******

0-3

**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.

*** 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.

**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

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 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.

Electives

Completion of requirements for lower-division general education, upper-division general education and the major would entail 89 to 104 credits toward the 120 credits required for graduation. The remaining credit hours may be met with any university course the student is qualified to take, including additional courses in art.

Four-Year Plan - Studio Art - BA
(http://catalog.odu.edu/undergraduate/collegeofartsletters/art/studioart-bafouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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. 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

The Bachelor of Fine Arts (B.F.A.) is a professional degree that focuses on intensive work in the following visual arts majors: 3D Media and Material Studies, Painting and Drawing, and Photography and Print Media. The B.F.A. does not have a freshman entrance portfolio review for admission. Students who are pursuing the B.F.A. degree must consult with the Art Department’s Chief Departmental Advisor before or during their first semester at ODU. Students are expected to begin their art studio foundations coursework in their first year of study.

Continuance

Students seeking continuance into any of the B.F.A. majors must first successfully complete the art studio foundations coursework with a minimum grade of C. Students must then submit a portfolio of their work for evaluation by faculty within the major. After successfully completing the portfolio review, students will continue upper-level coursework in the major.

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 3
Human Behavior 3
Human Creativity ** 3
Select one of the following:
COMM/THEA Film Appreciation
270A
DANC 185A Dance and Its Audience
MUSC 264A Music in History and Culture
THEA 241A The Theatre Experience
Interpreting the Past 3
Literature 3
The Nature of Science 8
Philosophy and Ethics 3
Impact of Technology *** 0-3
Total Hours 38-47

* Grade of C or better required in both courses and in ENGL 110C before declaring a major in fine arts.
** Neither ARTH 121A nor ARTS 122A may be used to satisfy this requirement.
*** Can be fulfilled in the major with ARTH 435W Modern Architecture.

Upper-Division General Education

• Option A: Approved Minor (minimum 12 hours), second degree, or second major
• Option B: Interdisciplinary Minor (specifically 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 300/400 upper level 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 major, but no more than two courses may be used for both majors. Note that a second major fulfills the upper-division general education requirements.

Graduation

Requirements for graduation include completion of a minimum of 120 credit hours to include 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, completion of the Senior Assessment, and a minimum grade point average of 2.00 with a grade of C or better in all courses required for the major, including prerequisite courses.

3D Media and Material Studies Major

In keeping with the Art Department’s mission of empowering students to become visually critical thinkers through their creative practice, the 3D Media and Material Studies major focuses on making as a form of thinking
through technical mastery of both traditional craftsmanship and emerging technologies. Students are also exposed to the expanding range of working three-dimensional studio practice, including performance and installation and time-based art. Through immersion in a research and process-oriented curriculum, students develop a range of transferable skills and a body of work reflecting artistic maturity, material proficiency, and conceptual development.

### Art History Coursework

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 150</td>
<td>Global Survey of Art History</td>
<td>3</td>
</tr>
<tr>
<td>200-level Art History (ARTH) Survey Course</td>
<td>3</td>
<td></td>
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</tbody>
</table>

Select one of the following Writing Intensive courses: * 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ARTH 320W</td>
<td>History of Graphic Design</td>
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</tr>
<tr>
<td>ARTH 350W</td>
<td>Art Criticism</td>
<td></td>
</tr>
<tr>
<td>ARTH 351W</td>
<td>Research Methods in Art History</td>
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</tr>
<tr>
<td>ARTH 435W</td>
<td>Modern Architecture</td>
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</tr>
</tbody>
</table>

300-level Art History (ARTH) Elective Course 3

400-level Art History (ARTH) Elective Course 3

**Total Hours** 15

### Art Studio Foundations Coursework

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARTS 202</td>
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</tr>
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</tr>
<tr>
<td>ARTS 279</td>
<td>Digital Basics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours** 15

### Art Studio Required Coursework

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
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</tr>
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<td>Introduction to Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 263</td>
<td>Introduction to Ceramics</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following: 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ARTS 281</td>
<td>Weaving and Fibers: Introduction</td>
<td></td>
</tr>
<tr>
<td>ARTS 291</td>
<td>Metalsmithing and Jewelry: Introduction</td>
<td></td>
</tr>
<tr>
<td>ARTS 392</td>
<td>Crafts: Blacksmithing</td>
<td></td>
</tr>
</tbody>
</table>

**Total Hours** 15

### 3D Media and Material Studies Major Coursework

Select seven of the following major courses: 21

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ARTS 361</td>
<td>Advanced Sculpture</td>
<td></td>
</tr>
<tr>
<td>ARTS 363</td>
<td>Intermediate Ceramics</td>
<td></td>
</tr>
<tr>
<td>ARTS 381</td>
<td>Weaving and Fibers: Intermediate</td>
<td></td>
</tr>
<tr>
<td>ARTS 391</td>
<td>Metalsmithing and Jewelry: Intermediate</td>
<td></td>
</tr>
<tr>
<td>ARTS 393</td>
<td>Alternative Jewelry</td>
<td></td>
</tr>
<tr>
<td>ARTS 461</td>
<td>Sculpture Studio</td>
<td></td>
</tr>
<tr>
<td>ARTS 463</td>
<td>Advanced Ceramics</td>
<td></td>
</tr>
<tr>
<td>ARTS 469</td>
<td>Assemblage</td>
<td></td>
</tr>
<tr>
<td>ARTS 481</td>
<td>Weaving and Fibers: Advanced</td>
<td></td>
</tr>
<tr>
<td>ARTS 491</td>
<td>Metalsmithing and Jewelry: Advanced</td>
<td></td>
</tr>
<tr>
<td>ARTS 492</td>
<td>Wood Studio Furniture Design</td>
<td></td>
</tr>
<tr>
<td>ARTS 493</td>
<td>Metalsmithing Studio</td>
<td></td>
</tr>
<tr>
<td>ARTS 368</td>
<td>Internship</td>
<td></td>
</tr>
<tr>
<td>ARTS 395</td>
<td>Topics in Studio Art (Ceramics, Metals or Fibers) **</td>
<td></td>
</tr>
<tr>
<td>ARTS 495</td>
<td>Topics in Studio Art (Ceramics, Metals or Fibers) **</td>
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<tr>
<td>ARTS 497</td>
<td>Tutorial Work in Special Studio Topics **</td>
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<tr>
<td>ARTS 498</td>
<td>Tutorial Work in Special Studio Topics **</td>
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Select two of the following elective courses: 6

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ARTH 435W</td>
<td>History of Graphic Design</td>
<td></td>
</tr>
<tr>
<td>ARTH 350W</td>
<td>Art Criticism</td>
<td></td>
</tr>
<tr>
<td>ARTH 351W</td>
<td>Research Methods in Art History</td>
<td></td>
</tr>
<tr>
<td>ARTH 435W</td>
<td>Modern Architecture</td>
<td></td>
</tr>
<tr>
<td>300-level Art History (ARTH) Elective Course</td>
<td>3</td>
<td></td>
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<tr>
<td>400-level Art History (ARTH) Elective Course</td>
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**Total Hours** 15

### Art History Coursework

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 150</td>
<td>Global Survey of Art History</td>
<td>3</td>
</tr>
<tr>
<td>200-level Art History (ARTH) Survey Course</td>
<td>3</td>
<td></td>
</tr>
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</table>

Select one of the following Writing Intensive courses: * 3

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 320W</td>
<td>History of Graphic Design</td>
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</tr>
<tr>
<td>ARTH 350W</td>
<td>Art Criticism</td>
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<td>ARTH 435W</td>
<td>Modern Architecture</td>
<td></td>
</tr>
</tbody>
</table>

300-level Art History (ARTH) Elective Course 3

400-level Art History (ARTH) Elective Course 3

**Total Hours** 30

* C or better required
** With 3D faculty approval

### Four-Year Plan - 3D Media and Material Studies - BFA ([link](http://catalog.odu.edu/undergraduate/collegeofartsletters/art/3dmedia-bfa-fouryearplan))

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Painting and Drawing Major

The Painting and Drawing program supports the investigation of various methods, forms and histories of painting and drawing in addition to the spaces these modes occupy in the contemporary sphere. Students begin their studies with a thorough grounding in the skills required to successfully engage the traditions and contemporary practices of painting and drawing. Initial coursework provides students strong technical, perceptual and visualization skills through a comprehensive and rigorous Foundations and Studio Core curriculum, gaining material handling competencies of both painting and drawing media. Intermediate coursework includes a review and expansion of these competencies with exploration into the expressive potential of painting and drawing through thematically-driven projects. Advanced coursework provides students the tools to develop individual bodies of work exploring individualized preferred concepts, subject matter, techniques, and media.

Painting and Drawing students are recognized as artists and are treated as such; their individual voices are vital to the learning experience cultivated within the program. Painting and Drawing students generate artworks that position them for success in today’s competitive market. At the conclusion of their studies, painting and drawing students are capable of creating works of personal pursuit that display an understanding of the historical and contemporary contexts of art making. Additionally, students will have obtained a high level of technical facility, knowledge of professional practice standards, as well as an appreciation for the limitless possibilities of their creativity and the multitude of tools at their disposal.

### Art History Coursework

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300-level Art History (ARTH) Elective Course 3

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**Total Hours** 15

### Art Studio Foundations Coursework

<table>
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**Total Hours** 15

### Art Studio Required Coursework

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**Total Hours** 15

Old Dominion University 108
In photography, students will gain a broad understanding of contemporary photography and its applications in today’s world. From digital to analog, students will become well versed in technique as well as contemporary theory. Classes focus on darkroom, digital editing and studio lighting along with learning how to develop their own unique voice as a photographer and artist.

In print media, students have the opportunity to learn a wide range of print techniques and strategies. Every major image reproduction technology, from woodblock printing to large-format inkjet prints, is available to students. Print technique, history, and theory are brought together in guiding students’ creative work and artistic development.

Classes take place in the department’s brand-new art building equipped with a state-of-the-art computer lab dedicated to photo students and supplied with the latest software. In addition, the photo area contains a darkroom, lighting studio, advanced print lab and general workroom. The print area is equipped for letterpress, screenprint, lithography, relief, and intaglio printmaking, in addition to a digital print lab.

At the end of the program students will take a yearlong seminar dedicated to developing a provocative senior project that will culminate in the senior exhibition at the Baron and Ellin Gordon Art Galleries.

Photography and Print Media Major

The Photography and Print Media major is a unique combination of reproducible media and concept-driven art practice. This pairing provides students with the ability to experiment across disciplines or to concentrate mainly in photography or print media. Each student will develop an individual program of courses that meets their interests.

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### Four-Year Plan - Photography and Print Media - BFA

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### 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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

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 Professional 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 Subject assessment (formerly Praxis II) art content knowledge test 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.

#### Background Clearance Requirement

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in many of the professional education programs.

The background clearance for the BFA with Teaching Licensure is required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in many of the professional education programs.

#### 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 Subject assessment (formerly PRAXIS II) art content knowledge (test code 5132), passing score of 158 required

To review more information on the Virginia Board of Education prescribed assessments, visit the Teacher Education Services website, www.odu.edu/tes.

#### Graduation

Requirements for graduation include 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; 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, ARTS 406, ARTS 407, ARTS 408; SPED 313, SPED 406; TLED 301, TLED 408 and TLED 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 supersedes 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.

**Bachelor of Fine Arts in Graphic Design***

The B.F.A. in Graphic Design is a professional degree program providing a sequenced curriculum structured to prepare students for successful transition to professional practice designing communications for a wide range of traditional and digital delivery. Graduating portfolio at the B.F.A. in Graphic Design must present a rich experience in print design, branding, packaging, interactive media, advertising, typography, and image making. Students graduating from the program pursue careers in graphic design studios and advertising agencies throughout the country, or continue their education in M.F.A. programs.

The program provides a solid foundation of traditional art experiences and design practices and principles to build students’ ability to create dynamic visual designs. The core graphic design curriculum stresses essential competencies in conceptual problem solving, research, analysis and articulation, aesthetics, design theory, productivity, and the application of technology, necessary for both advanced exploration and entry into professional practice.

All graphic design students can expect a creative environment built upon the experience of a faculty of practicing designers and design educators. Limited enrollment and class sizes ensure an intense and individualized course of study. The department’s dedicated state-of-the-art facilities include classroom and production spaces built and equipped to facilitate instruction and invention with traditional and digital media. The program strongly encourages and supports critical interaction with the design community through internships, professional memberships, and participation in design competitions.

*Pending approval by the State Council of Higher Education for Virginia and the National Association of Schools of Art and Design (NASAD).

**Admission Requirements**

The B.F.A. in Graphic Design does not have a freshman entrance portfolio review for admission. Students who are pursuing the B.F.A. in Graphic Design degree must consult with the Chief Departmental Advisor before or during their first semester at ODU. Students are expected to begin their art studio foundations coursework in their first year of study.

**Graphic Design Continuance Review Requirements**

Intended students in the graphic design program are expected to successfully complete the required art studio foundations coursework during the first year of study. In their second year, intended students will begin the required sequence of courses in the graphic design program. Prior to students’ application for admission into the B.F.A. in Graphic Design degree program, they must first successfully complete required foundational art studio and graphic design coursework with a minimum grade of C. Students must register for and pass GDES 370—Graphic Design Continuance Review—in order to be admitted into the program. In the course, students will submit a portfolio of work (consisting of two pieces from ARTS 202, two pieces from ARTS 231, two pieces from ARTS 279 and a total of six pieces from GDES 280 and GDES 365, and a 500-word essay; they must also complete an essay and articulation exam. Completion of the foundational art studio and graphic design courses does not guarantee acceptance into the program. Due to the sequence of the required graphic design courses, accepted students are admitted to the program only in the fall semester.

Transfer students must demonstrate equivalent preparation at another institution to receive credit for the art studio foundations courses. In order to receive credit for GDES 280, transfer students must submit a portfolio of work from an equivalent course for review by the graphic design faculty. Upon successful completion of foundational art studio and graphic design coursework, transfer students must register for and pass GDES 370 for admission into the graphic design program.

**Graphic Design Program Requirements**

Details concerning the portfolio submission and review process are available on the ODU Graphic Design website page. Students who are accepted into the graphic design program 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 website. Continuance in the graphic design program requires a grade of C or better in all prerequisite courses and requirements in the graphic design sequence.

**Graphic Design Senior Exit Review Requirements**

Graphic design students enrolled in GDES 491 must present their graduating portfolio or thesis project at the Graphic Design Senior Exit Review, which occurs at the end of the Spring semester.

**Graduation**

Requirements for graduation include completion of a minimum of 120 credit hours to include 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, completion of the Senior Assessment, and a minimum grade point average of 2.00 with a grade of C or better in all courses required for the major, including prerequisite courses.

**Lower-Division General Education**

**Written Communication Skills**

<table>
<thead>
<tr>
<th>ENGL 110C</th>
<th>English Composition</th>
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Select one of the following:

<table>
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<tr>
<th>ENGL 211C</th>
<th>English Composition</th>
<th>3</th>
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<tbody>
<tr>
<td>ENGL 221C</td>
<td>Introduction to Writing in Business, Education and Social Sciences</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 231C</td>
<td>Introduction to Technical Writing</td>
<td>3</td>
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</tbody>
</table>

**Oral Communication Skills**

<table>
<thead>
<tr>
<th>COMM/THEA 270A</th>
<th>Film Appreciation</th>
<th>3</th>
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<tbody>
<tr>
<td>DANC 185A</td>
<td>Dance and Its Audience</td>
<td>3</td>
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<tr>
<td>MUSC 264A</td>
<td>Music in History and Culture</td>
<td>3</td>
</tr>
<tr>
<td>THEA 241A</td>
<td>The Theatre Experience</td>
<td>3</td>
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</table>

**Interpreting the Past**

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<th>ENGL 110C</th>
<th>English Composition</th>
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**Literature**

<table>
<thead>
<tr>
<th>THEA 241A</th>
<th>The Theatre Experience</th>
<th>3</th>
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**The Nature of Science**

| MATH 270A | Mathematics for Science and Social Sciences | 3 |

**Philosophy and Ethics**

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<tr>
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**Impact of Technology**

<table>
<thead>
<tr>
<th>ENGL 110C</th>
<th>English Composition</th>
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**Total Hours**

<table>
<thead>
<tr>
<th>ENGL 110C</th>
<th>English Composition</th>
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</table>

**Upper-Division General Education**

- Option A: Approved Minor (minimum 12 hours), second degree, or second major
A student may take a double major, but no more than two courses may be used for both majors. Note that a second major fulfills the upper-division general education requirements.

B.F.A. in Graphic Design Coursework

Art History Foundation Coursework

<table>
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<td>ARTH 320W</td>
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<td>Total Hours</td>
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Art Studio Foundations Coursework

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<tr>
<td>ARTS 202</td>
<td>Two-Dimensional Design and Color Theory**</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 203</td>
<td>Three-Dimensional Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 231</td>
<td>Drawing I: Fundamentals of Drawing **</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 279</td>
<td>Digital Basics **</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Art Studio Required Coursework

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 211</td>
<td>Introduction to Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 261</td>
<td>Introduction to Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 331</td>
<td>Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following Printmaking courses:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ARTS 257</td>
<td>Print I: Intaglio and Relief</td>
<td></td>
</tr>
<tr>
<td>ARTS 258</td>
<td>Print I: Screenprint and Lithography</td>
<td></td>
</tr>
<tr>
<td>ARTS 259</td>
<td>Print I: Letterpress and Book Arts</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Graphic Design Coursework

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDES 280</td>
<td>Introduction to Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>GDES 365</td>
<td>Basic Typography</td>
<td>3</td>
</tr>
<tr>
<td>GDES 370</td>
<td>Graphic Design Continuance Review</td>
<td>1</td>
</tr>
<tr>
<td>GDES 371</td>
<td>Design Concepts</td>
<td>3</td>
</tr>
<tr>
<td>GDES 372</td>
<td>Advanced Typography</td>
<td>3</td>
</tr>
<tr>
<td>GDES 373</td>
<td>Design Systems</td>
<td>3</td>
</tr>
<tr>
<td>GDES 490</td>
<td>Design Seminar</td>
<td>3</td>
</tr>
<tr>
<td>GDES 491</td>
<td>Design Capstone</td>
<td>3</td>
</tr>
<tr>
<td>Select five of the following graphic design electives:</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>GDES 368</td>
<td>Design Internship ***</td>
<td></td>
</tr>
<tr>
<td>GDES 374</td>
<td>Web Design</td>
<td></td>
</tr>
<tr>
<td>GDES 375</td>
<td>Poster Design</td>
<td></td>
</tr>
<tr>
<td>GDES 376</td>
<td>Typographic Design</td>
<td></td>
</tr>
<tr>
<td>GDES 377</td>
<td>Illustrative Design</td>
<td></td>
</tr>
<tr>
<td>GDES 378</td>
<td>Brand Identity</td>
<td></td>
</tr>
<tr>
<td>GDES 379</td>
<td>Environmental Graphics</td>
<td></td>
</tr>
<tr>
<td>GDES 380</td>
<td>Art Direction</td>
<td></td>
</tr>
<tr>
<td>GDES 381</td>
<td>Interactive Design</td>
<td></td>
</tr>
<tr>
<td>GDES 395</td>
<td>Topics in Graphic Design ***</td>
<td></td>
</tr>
<tr>
<td>GDES 472</td>
<td>Package Design</td>
<td></td>
</tr>
<tr>
<td>GDES 473</td>
<td>Book Design</td>
<td></td>
</tr>
<tr>
<td>GDES 474</td>
<td>Motion Graphics</td>
<td></td>
</tr>
<tr>
<td>GDES 475</td>
<td>Editorial Design</td>
<td></td>
</tr>
<tr>
<td>GDES 476</td>
<td>Letterpress Design</td>
<td></td>
</tr>
<tr>
<td>GDES 497</td>
<td>Tutorial Work in Graphic Design ***</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>37</td>
</tr>
</tbody>
</table>

* C or better required
** Prerequisite to GDES 280
*** With graphic design faculty approval

Four-Year Plan - Graphic Design Major - BFA (http://catalog.odu.edu/undergraduate/collegeofartsletters/art/graphicdesign-bfa-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Graphic Design Coursework Four-Year Curriculum Plan

The Graphic Design curriculum is sequential; required graphic design courses must be taken in order. Students seeking to complete their entire course of study in four years must follow the sequence of Art Studio classes listed below. The Suggested Curriculum Sequence Form can be found on the Art Department website, and contains a semester-by-semester breakdown of the full sequence of courses. Elective courses vary every semester, and should be taken after acceptance into the program.

FIRST YEAR: FRESHMAN

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>ARTS 202</td>
<td>Two-Dimensional Design and Color Theory**</td>
<td>3</td>
</tr>
<tr>
<td>Spring</td>
<td>ARTS 231</td>
<td>Drawing I: Fundamentals of Drawing **</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ARTS 279</td>
<td>Digital Basics **</td>
<td>3</td>
</tr>
</tbody>
</table>

These courses are prerequisites to GDES 280 and may be taken in any order or grouping across the fall and spring semesters.

SECOND YEAR: SOPHOMORE

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>GDES 280</td>
<td>Introduction to Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>Spring</td>
<td>GDES 365</td>
<td>Basic Typography</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GDES 371</td>
<td>Graphic Design Continuance Review</td>
<td>1</td>
</tr>
</tbody>
</table>

Passing the Graphic Design Continuance Review course is required to advance to GDES 371 and GDES 372.

THIRD YEAR: JUNIOR

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>GDES 371</td>
<td>Design Concepts</td>
<td>3</td>
</tr>
<tr>
<td>Spring</td>
<td>GDES 372</td>
<td>Advanced Typography</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GDES 373</td>
<td>Design Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

FOURTH YEAR: SENIOR

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>GDES 373</td>
<td>Design Systems</td>
<td>3</td>
</tr>
<tr>
<td>Spring</td>
<td>GDES 490</td>
<td>Design Seminar</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GDES 491</td>
<td>Design Capstone</td>
<td>3</td>
</tr>
</tbody>
</table>

Transfer Requirements

For the B.A. degrees in studio art and art education, students must complete a minimum of 30 credit hours at Old Dominion University. These 30 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 B.F.A. 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 B.F.A 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.

Linked Bachelor's in Art, Art Studio and Fine Arts and M.A. in Humanities

The linked bachelor's programs in art history, studio art and fine arts and the M.A. in humanities make it possible for exceptional students to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree. Students must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Please refer to the Humanities section of this Catalog for additional information on the linked programs.

Asian Studies

Web Site: http://www.odu.edu/asianstudies

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication *</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture **</td>
<td>0-12</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>0-3</td>
</tr>
<tr>
<td>(can be met in the major by HIST 201 or POLS 308)</td>
<td></td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td></td>
</tr>
<tr>
<td>HIST 101H</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>Impact of Technology</td>
<td>3</td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>38-53</td>
</tr>
</tbody>
</table>

* 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 201</td>
<td>3</td>
</tr>
<tr>
<td>POLS 308</td>
<td></td>
</tr>
<tr>
<td>SOC 337</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 317</td>
<td></td>
</tr>
<tr>
<td>ECON 400</td>
<td></td>
</tr>
</tbody>
</table>

Capstone Seminar in Asian Studies

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASIA 461W</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours

6

* Grade of C or better required.

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.

Asian Studies

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASIA 332</td>
<td>3</td>
</tr>
<tr>
<td>ASIA/HIST 336</td>
<td>3</td>
</tr>
<tr>
<td>ASIA 337/HIST 338</td>
<td>3</td>
</tr>
<tr>
<td>ASIA/POLS 338W</td>
<td>3</td>
</tr>
<tr>
<td>ASIA/PHIL 353</td>
<td>3</td>
</tr>
<tr>
<td>ASIA 360</td>
<td>3</td>
</tr>
<tr>
<td>ASIA 395</td>
<td>3</td>
</tr>
<tr>
<td>ASIA/POLS 435</td>
<td>3</td>
</tr>
<tr>
<td>ASIA 461W</td>
<td>3</td>
</tr>
<tr>
<td>ASIA 495</td>
<td>3</td>
</tr>
</tbody>
</table>

Asian Experience (Study Abroad or an approved practicum; consult with the director for arrangements)

Business Management and Marketing

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 463</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 496</td>
<td>3</td>
</tr>
</tbody>
</table>

Communication

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 300</td>
<td>3</td>
</tr>
<tr>
<td>COMM 400W</td>
<td>3</td>
</tr>
<tr>
<td>COMM 407</td>
<td>3</td>
</tr>
<tr>
<td>COMM 495/496</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Economics

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 450</td>
<td>3</td>
</tr>
<tr>
<td>ECON 454W</td>
<td>3</td>
</tr>
<tr>
<td>ECON 495</td>
<td>3</td>
</tr>
</tbody>
</table>

English

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 396</td>
<td>1-3</td>
</tr>
<tr>
<td>ENGL 495</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Filipino American Studies

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAST 395</td>
<td>3</td>
</tr>
</tbody>
</table>

Foreign Languages
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  Communicative Competence: Speaking and Listening  3
JAPN 312  Communicative Competence: Writing and Reading  3
JAPN 396  Topics in Japanese  1-3
WCS 310  Japan: A Cultural Odyssey (Culture class in English)  3

Geography
GEOG 453  Asia  3
GEOG 495/496  Topics in Geography (Asian content)  1-4

History
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

International Business
INBU 433  Doing Business in Asia  3
INBU 463  International Business Seminar Abroad  3

Philosophy and Religious Studies
REL 352  Islam  3
PHIL/ASIA 353  Asian Religions  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

Political Science
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

Psychology
PSYC 420  Cross-Cultural Psychology  3

Sociology
SOC 306  Religion and Society  3
SOC 395  Topics in Sociology (Asian content)  3

Women’s Studies
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).

Asian Studies courses and any course listed as an elective choice for the major cannot be used to meet this option.

Requirements for Graduation
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.

Four-Year Plan - Asian Studies - BA
(http://catalog.odu.edu/undergraduate/collegeofartsletters/asianstudies/asianstudies-ba-fouryearplan)
This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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:
MKTG 463  Management Seminar Abroad  3
MKTG 496  Selected Topics in Marketing *  1-3

Communication:
COMM 300  International Sojournig  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

Old Dominion University  114
Filipino-American Studies:
FAST 395  Topics in Filipino American Studies 3

Foreign Languages:
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  Communicative Competence: Speaking and Listening 3
JAPN 312  Communicative Competence: Writing and Reading 3
JAPN 396  Topics in Japanese 1-3
JAPN 495  Topics in Japanese 1-3
WCS 310  Japan: A Cultural Odyssey 3

Geography:
GEOG 453  Asia 3
GEOG 495/496  Topics in Geography * 1-4

History:
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

International Business:
INBU 433  Doing Business in Asia 3
INBU 463  International Business Seminar Abroad 3

Philosophy and Religious Studies:
PHIL 353  Asian Religions 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

Political Science:
POLS 338W  Politics of East Asia 3
POLS 435  Japanese Politics 3
POLS 436  International Relations in East Asia 3
POLS 495/496  Topics in Political Science * 1-3

Psychology:
PSYC 420  Cross-Cultural Psychology 3
PSYC 495  Topics in Psychology * 1-3

Sociology:
SOC 306  Religion and Society 3
SOC 395  Topics in Sociology * 3
SOC 396  Topics in Sociology * 3

Women's Studies:
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 World Languages and Cultures (p. 167).

Minor in Japanese
The Japanese 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 World Languages and Cultures (p. 167).

Communication and Theatre Arts
Web Site: http://www.odu.edu/commtheatre
Avi Santo, Chair
The Department of Communication and Theatre Arts offers the following undergraduate degree programs.

Bachelor of Arts or Bachelor of Science in Communication with concentrations in the following areas:
- Cinema & TV Production
- Film Studies
- Intercultural/International Communication
- Lifespan Communication: Relationships and Groups
- Media Studies
- Public Relations, Advocacy, and Persuasion
- Communication Foundations
- Professional Communication (Bachelor of Science only)

Bachelor of Arts in Theatre and Dance with majors in the following areas:
- Cinema Production Major
- Dance Major
- Dance Education Major
- Design/Technology Major
- Performance Major
- Theatre Major
- Theatre Education Major

Minors are offered in Communication, Theatre, and Dance.

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 in Communication
Carla Harrell, Chief Departmental Advisor for Communication
Carolina Conte, Chief Departmental Advisor of Cinema & TV Production

Lower-Division General Education
Written Communication 6
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>English Composition (must pass with C or better before declaring COMM major)</td>
</tr>
<tr>
<td>ENGL 211C</td>
<td>English Composition (must pass with C or better)</td>
</tr>
</tbody>
</table>

Oral Communication 3
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 101R</td>
<td>Public Speaking (Required for Communication majors)</td>
</tr>
</tbody>
</table>

Mathematics 3
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 130M</td>
<td>Elementary Statistics (Required for BS in Communication)</td>
</tr>
</tbody>
</table>

Language and Culture 0-12
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity **</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>
### Communication Core (B.A.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 200S Introduction to Human Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 260 Understanding Media</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>6</td>
</tr>
</tbody>
</table>

### B.A. Additional Core Course (select one of the following)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 335W Rhetorical Criticism</td>
<td>3</td>
</tr>
<tr>
<td>COMM 445 Communication Analysis and Criticism</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>9</td>
</tr>
</tbody>
</table>

### Communication Core (B.S.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 200S Introduction to Human Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 260 Understanding Media</td>
<td>3</td>
</tr>
<tr>
<td>COMM 302 Communication Research Methods I</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>12</td>
</tr>
</tbody>
</table>

### B.S. Additional Core Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six hours of approved 300/400-level social science courses</td>
<td>6</td>
</tr>
<tr>
<td>Total Hours</td>
<td>18</td>
</tr>
</tbody>
</table>

### Additional Communication Concentration Courses (B.A. & B.S.)

Students pursuing either the B.A. or the B.S. degree are required to take 10 Communication classes beyond the core course requirements listed above. Eight of those 10 courses (24 hours) must be in the student's selected concentration area (see concentration areas below). Two courses (6 hours) may be 100-200 level and/or from any concentration area.

### Concentration Areas

#### Cinema & TV Production

Choose courses from the listings below for a total of 24 credit hours: two courses (6 credit hours) from Foundations and 18 credit hours from Applied Theories.

**Foundations (select two of the following)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 383 Directing the Actor</td>
<td>3</td>
</tr>
<tr>
<td>COMM 385 Cinematography</td>
<td>3</td>
</tr>
<tr>
<td>COMM 386 Video and Audio Editing</td>
<td>3</td>
</tr>
<tr>
<td>COMM 387 TV News Production</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>6</td>
</tr>
</tbody>
</table>

**Applied Theories (select from the following for a total of 18 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 330 The Short Script</td>
<td>3</td>
</tr>
<tr>
<td>COMM 346 Screenwriting I</td>
<td>3</td>
</tr>
<tr>
<td>COMM 348 Acting for the Camera</td>
<td>3</td>
</tr>
<tr>
<td>COMM 368 Internship</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>18</td>
</tr>
</tbody>
</table>

#### Film Studies

Choose eight courses (24 hours): two courses (6 hours) from Foundations and six courses (18 hours) from Applied Theories.

**Foundations (select two of the following)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 330 The Short Script</td>
<td>3</td>
</tr>
<tr>
<td>COMM 368 Internship</td>
<td>3</td>
</tr>
<tr>
<td>COMM 380 Documentary Production I</td>
<td>3</td>
</tr>
<tr>
<td>COMM 388 Motion Picture Aesthetics</td>
<td>3</td>
</tr>
<tr>
<td>COMM 437 Model League of Arab States</td>
<td>3</td>
</tr>
<tr>
<td>COMM 442 Listening to Self, Others, Nature and the Divine</td>
<td>3</td>
</tr>
<tr>
<td>COMM 443 Hispanic Film</td>
<td>3</td>
</tr>
<tr>
<td>COMM 444 German Cinema I</td>
<td>3</td>
</tr>
<tr>
<td>COMM 449 TV Screenwriting</td>
<td>3</td>
</tr>
<tr>
<td>COMM 480 Documentary Production II</td>
<td>3</td>
</tr>
<tr>
<td>COMM 481 The Documentary Tradition</td>
<td>3</td>
</tr>
<tr>
<td>COMM 482 Screenwriting II</td>
<td>3</td>
</tr>
<tr>
<td>COMM 483 Advanced Video Project</td>
<td>3</td>
</tr>
<tr>
<td>COMM 485 Film and Television Genres</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>24</td>
</tr>
</tbody>
</table>

#### Intercultural/International Communication

Choose eight courses (24 hours): two courses (6 hours) from Foundations and six courses (18 hours) from Applied Theories.

**Foundations (select two of the following)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 300 International Sojourning</td>
<td>3</td>
</tr>
<tr>
<td>COMM 306 Diplomatic Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 314 Nonverbal Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 337 Model League of Arab States</td>
<td>3</td>
</tr>
<tr>
<td>COMM 400W Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 405 Communication and Culture in the Middle East</td>
<td>3</td>
</tr>
<tr>
<td>COMM 407 Communication and Culture in Asia</td>
<td>3</td>
</tr>
<tr>
<td>COMM 422 Listening to Self, Others, Nature and the Divine</td>
<td>3</td>
</tr>
<tr>
<td>COMM 434 African-American Rhetoric Voices of Liberation</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>6</td>
</tr>
</tbody>
</table>

**Applied Theories (select six of the following)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 307 Understanding European Film</td>
<td>3</td>
</tr>
<tr>
<td>COMM 340 Media and Popular Culture</td>
<td>3</td>
</tr>
<tr>
<td>COMM 366 Public Journalism in the Digital Age</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>18</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>COMM 368</td>
<td>Internship</td>
</tr>
<tr>
<td>COMM 382</td>
<td>Reporting News for Television and Digital Media</td>
</tr>
<tr>
<td>COMM 423</td>
<td>Nonviolent Communication and Peace</td>
</tr>
<tr>
<td>COMM 443</td>
<td>Hispanic Film</td>
</tr>
<tr>
<td>COMM 444</td>
<td>German Cinema I</td>
</tr>
<tr>
<td>or WCS 445</td>
<td>German Cinema I</td>
</tr>
<tr>
<td>COMM 447W</td>
<td>Electronic Media Law and Policy</td>
</tr>
<tr>
<td>COMM 448</td>
<td>Transnational Media Systems</td>
</tr>
<tr>
<td>COMM 471W</td>
<td>International Film History</td>
</tr>
<tr>
<td>COMM 472</td>
<td>New Media Topics: Theories and Practices</td>
</tr>
<tr>
<td>COMM 473</td>
<td>Television and Society</td>
</tr>
<tr>
<td>COMM 481</td>
<td>The Documentary Tradition</td>
</tr>
</tbody>
</table>

Total Hours 24

**Lifespan Communication: Relationships and Groups**

Choose eight courses (24 hours): two courses (6 hours) from Foundations and six courses (18 hours) from Applied Theories.

**Foundations (select two of the following)** 6

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 314</td>
<td>Nonverbal Communication</td>
</tr>
<tr>
<td>COMM 326</td>
<td>Foundations of Group Communication</td>
</tr>
<tr>
<td>COMM 412W</td>
<td>Interpersonal Communication Theory and Research</td>
</tr>
<tr>
<td>COMM 422</td>
<td>Listening to Self, Others, Nature and the Divine</td>
</tr>
</tbody>
</table>

**Applied Theories (select six of the following)** 18

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 305</td>
<td>Professional Communication</td>
</tr>
<tr>
<td>COMM 315W</td>
<td>Communication Between the Sexes</td>
</tr>
<tr>
<td>COMM 332</td>
<td>Leadership and Events Management</td>
</tr>
<tr>
<td>COMM 351</td>
<td>Interpersonal Communication in Organizations</td>
</tr>
<tr>
<td>COMM 355</td>
<td>Organizational Communication</td>
</tr>
<tr>
<td>COMM 368</td>
<td>Internship</td>
</tr>
<tr>
<td>COMM 401</td>
<td>Communication Theory</td>
</tr>
<tr>
<td>COMM 421</td>
<td>Communication and Conflict Management</td>
</tr>
<tr>
<td>COMM 423</td>
<td>Nonviolent Communication and Peace</td>
</tr>
<tr>
<td>COMM 425</td>
<td>Family Communication Theory and Research</td>
</tr>
<tr>
<td>COMM 427</td>
<td>Children's Communication Theory and Research</td>
</tr>
<tr>
<td>COMM 456</td>
<td>Organizations and Social Influence</td>
</tr>
<tr>
<td>COMM 489</td>
<td>Health and Interpersonal Communication</td>
</tr>
</tbody>
</table>

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.

**Foundations (select two of the following)** 6

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 303</td>
<td>Introduction to Public Relations</td>
</tr>
<tr>
<td>COMM 304</td>
<td>Advanced Public Speaking</td>
</tr>
<tr>
<td>COMM 305</td>
<td>Professional Communication</td>
</tr>
<tr>
<td>COMM 308W</td>
<td>Public Relations Writing</td>
</tr>
<tr>
<td>COMM 314</td>
<td>Nonverbal Communication</td>
</tr>
<tr>
<td>COMM 326</td>
<td>Foundations of Group Communication</td>
</tr>
<tr>
<td>COMM 333</td>
<td>Persuasion</td>
</tr>
<tr>
<td>COMM 335W</td>
<td>Rhetorical Criticism</td>
</tr>
<tr>
<td>COMM 351</td>
<td>Interpersonal Communication in Organizations</td>
</tr>
<tr>
<td>COMM 355</td>
<td>Organizational Communication</td>
</tr>
<tr>
<td>COMM 364</td>
<td>Radio</td>
</tr>
<tr>
<td>COMM 365</td>
<td>Electronic News</td>
</tr>
<tr>
<td>COMM 366</td>
<td>Public Journalism in the Digital Age</td>
</tr>
<tr>
<td>COMM 382</td>
<td>Reporting News for Television and Digital Media</td>
</tr>
<tr>
<td>COMM 372T</td>
<td>Introduction to New Media Technologies</td>
</tr>
<tr>
<td>COMM 387</td>
<td>TV News Production</td>
</tr>
<tr>
<td>COMM 422</td>
<td>Listening to Self, Others, Nature and the Divine</td>
</tr>
</tbody>
</table>

**Applied Theories (select six of the following)** 18

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 368</td>
<td>Internship</td>
</tr>
<tr>
<td>COMM 387</td>
<td>TV News Production</td>
</tr>
<tr>
<td>COMM 389</td>
<td>WHRO Production</td>
</tr>
<tr>
<td>COMM 440</td>
<td>Documentary Filmmaking Study Abroad</td>
</tr>
<tr>
<td>COMM 441</td>
<td>The Music Industry and Communication</td>
</tr>
<tr>
<td>COMM 443</td>
<td>Hispanic Film</td>
</tr>
<tr>
<td>COMM 444</td>
<td>German Cinema I</td>
</tr>
<tr>
<td>or WCS 445</td>
<td>German Cinema I</td>
</tr>
<tr>
<td>COMM 447W</td>
<td>Electronic Media Law and Policy</td>
</tr>
<tr>
<td>COMM 448</td>
<td>Transnational Media Systems</td>
</tr>
<tr>
<td>COMM 449</td>
<td>TV Screenwriting</td>
</tr>
<tr>
<td>COMM 455</td>
<td>Critical Analysis of Journalism</td>
</tr>
<tr>
<td>COMM 471W</td>
<td>International Film History</td>
</tr>
<tr>
<td>COMM 472</td>
<td>New Media Topics: Theories and Practices</td>
</tr>
<tr>
<td>COMM 473</td>
<td>Television and Society</td>
</tr>
<tr>
<td>COMM 474</td>
<td>Reality Television</td>
</tr>
<tr>
<td>COMM 478</td>
<td>Principles of Media Marketing and Promotion</td>
</tr>
<tr>
<td>COMM 479W</td>
<td>American Film History</td>
</tr>
<tr>
<td>COMM 481</td>
<td>The Documentary Tradition</td>
</tr>
<tr>
<td>COMM 482</td>
<td>Screenwriting II</td>
</tr>
<tr>
<td>COMM 485</td>
<td>Film and Television Genres</td>
</tr>
<tr>
<td>COMM 486</td>
<td>Advanced Filmmaking</td>
</tr>
<tr>
<td>COMM 487</td>
<td>Advanced TV News Production</td>
</tr>
</tbody>
</table>

Total Hours 24
COMM 421 Communication and Conflict Management
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 472 New Media Topics: Theories and Practices
COMM 473 Television and Society
COMM 478 Principles of Media Marketing and Promotion
COMM 487 Advanced TV News Production

Total Hours 24

Communication Foundations

Students will take two courses in each of five of the six concentration areas listed above. 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
COMM 112R Introduction to Interpersonal Communication
COMM 302 Communication Research Methods I
COMM 368 Internship
COMM 369 Research Practicum
COMM 401 Communication Theory
COMM 469 Communication Education Practicum

Four-Year Plan - Communication

- BA ([http://catalog.odu.edu/undergraduate/collegeofartsletters/communicationandtheatrearts/communication-ba-fouryearplan](http://catalog.odu.edu/undergraduate/collegeofartsletters/communicationandtheatrearts/communication-ba-fouryearplan))

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Four-year Plan - Communication

- BS ([http://catalog.odu.edu/undergraduate/collegeofartsletters/communicationandtheatrearts/communication-bs-fouryearplan](http://catalog.odu.edu/undergraduate/collegeofartsletters/communicationandtheatrearts/communication-bs-fouryearplan))

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Professional Communication (B.S. only)

Fran Hassencahl, Chief Departmental Advisor for Professional Communication Concentration

The Bachelor of Science in Professional Communication is also available through distance learning. Distant students who have completed a university parallel associate degree can complete two additional years of course work through the University's distance learning program in order to earn a B.S. in Communication with a concentration in Professional Communication. Distant students without a university parallel associate degree must complete the lower-division general education requirements.

Total Hours 54

Writing Intensive Requirement

Communication majors must complete at least one writing intensive course in the major from the following courses:

Select one of the following

- COMM 308W Public Relations Writing
- COMM 315W Communication Between the Sexes
- COMM 335W Rhetorical Criticism
- COMM 400W Intercultural Communication

Professional Communication Core

COMM 200S Introduction to Human Communication
COMM 260 Understanding Media
COMM 302 Communication Research Methods I
COMM Writing Intensive (W) course (see Applied Theories listing below for appropriate selection)

Additional six hours of 300/400-level social science courses

Foundations (select two from the following) 6

- COMM 305 Professional Communication
- COMM 326 Foundations of Group Communication
- COMM 351 Interpersonal Communication in Organizations

Applied Theories (select six from the following) 18

- COMM 303 Introduction to Public Relations
- COMM 305 Professional Communication
- COMM 314 Nonverbal Communication
- COMM 315W Communication Between the Sexes
- COMM 333 Persuasion
- COMM 335W Rhetorical Criticism
- COMM 368 Internship
- COMM 400W Intercultural Communication
- COMM 401 Communication Theory
- COMM 403 Public Relations and Crisis Communications
- COMM 412W Interpersonal Communication Theory and Research
- COMM 421 Communication and Conflict Management
- COMM 447W Electronic Media Law and Policy

Professional Communication Electives (select four from the following) 12

- CS 300T Computers in Society
- FIN 331 Legal Environment of Business
- MGMT 325 Contemporary Organizations and Management
- MGMT 330 Organizational Behavior
- MGMT 340 Human Resources Management
- MGMT 350 Employee Relations Problems and Practices
- 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

* Meets the upper-division general education requirement
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

Special Topics in Communication courses and Communication Tutorials courses may be included in a given concentration when and where appropriate and as approved by the student's communication advisor:

- COMM 395 Topics in Communication
- COMM 396 Topics in Communication
- COMM 495 Topics in Communication
- COMM 496 Topics in Communication
- COMM 497 Tutorial Work in Special Topics in Communication

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 that are 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, 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.

Linked 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 linked 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 367, COMM 375, and COMM 368.

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

David Mallin, Chief Departmental Advisor for Cinema Production
Marilyn Marloff, Chief Departmental Advisor for Dance and Dance Education
Jim Lyden, Chief Departmental Advisor for Design/Technology, Performance, Theatre, and Theatre Education

Lower-Division General Education Credits

| Written Communication | 6 |
| Oral Communication (met in the major) | 0 |
| 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 |

Total Hours | 35-50 |

* Grade of C or better required in both courses and in ENGL 110C before declaring major.
** Proficiency through 202 level; proficiency not met by completion of an associate degree.
*** Design/technology majors, performance majors, theatre majors, and theatre education majors may not use THEA 241A; cinema production majors may not use COMM 270A/THEA 270A; dance and dance education majors may not use DANC 185A.
**** Dance education majors must take BIOL 117N/BIOL 118N.
***** Satisfied by TLED 430W for dance education and theatre education majors.
****** COMM 200S preferred.

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

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 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 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.

Departmental Requirements for Bachelor of Arts in Theatre and Dance

ODU offers a Bachelor of Arts (B.A.) in Theatre and Dance with seven majors: Cinema Production, Dance, Dance Education, Design/Technology, Performance, Theatre, and Theatre Education. All students pursuing the B.A. in Theatre and Dance must fulfill the core requirements and the requirements of a particular major. Majors must have a C or better in all courses required for the major.

All students pursuing a B.A degree in Theatre and Dance must complete the core requirements listed below.

THEA/DANC 152R Acting One 3
THEA/DANC/ COMM 271 Introduction to Filmmaking 3
THEA/DANC 390 Improvisation 3
THEA/DANC 373 Production/Performance Lab 1
THEA/DANC 374 Production/Performance Lab 1
THEA/DANC 473 Production/Performance Lab 1
THEA/DANC 474 Production/Performance Lab 1

Total Hours 13

Cinema Production Major

Carolina Conte, Chief Departmental Advisor for Cinema Production

Majors must have a grade of C or better in all courses required for the major.

If a film studies minor is elected, students may not use the same film courses to fulfill requirements for the major and minor.

THEA 225 Introduction to Production Technology 3
THEA 270A Film Appreciation 3
THEA 330 The Short Script 3
THEA 346 Screenwriting I 3
THEA 383 Directing the Actor 3
THEA 385 Cinematography 3
THEA 386 Video and Audio Editing 3
THEA 388 Motion Picture Aesthetics 3
THEA 446 Directing for the Camera or THEA 483 Advanced Video Project 3
THEA 486 Advanced Filmmaking 3
THEA 471W International Film History or THEA 479W American Film History 3
THEA/DANC Electives 6
Core Requirements 13
Total Hours 52

Four-Year Plan - Cinema Production Major - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/communicationandtheatrearts/theatreanddance/cinemaproduction-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Dance Major

Marilyn Marloff, Chief Departmental Advisor for Dance

Majors must have a grade of C or better in all courses required for the major

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 489 Principles of Teaching Dance 2

Select 10 credits from the following:

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

Total Hours 52

Minimum of 24 credits of technique to include 10 credits of ballet, 10 credits of modern dance, 2 credits of hip hop and 2 credits of ballet, modern or hip hop required.

As part of the Core Requirements, a minimum of 4 credits of practicum experience to include at least 2 credits of THEA/DANC Production/Performance Lab as performance (remaining 2 credits can be production or performance) required.

Minimum of 3 credits of DANC electives required at 200 level or above.

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.
The curriculum is as follows:

DANCE 201 Ballet Technique 1
DANCE 302 Ballet Technique 2
DANCE 303 Ballet Technique 3
DANCE 404 Ballet Technique 4
DANCE 405 Ballet Technique 5
DANCE 406 Ballet Technique 6
DANCE 211 Modern Dance Technique 1
DANCE 312 Modern Dance Technique 2
DANCE 313 Modern Dance Technique 3
DANCE 414 Modern Dance Technique 4
DANCE 415 Modern Dance Technique 5
DANCE 416 Modern Dance Technique 6
DANCE 370 Dance Composition 1
DANCE 389W Dance History from 1900 until the Present
DANCE 393 Anatomy and Kinesiology for Dance
DANCE 490 Pedagogy for Dance Educators

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment of Education</td>
<td>3</td>
</tr>
<tr>
<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>TLED 430W</td>
<td>PK-12 Instructional Technology *</td>
<td>3</td>
</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship **</td>
<td>12</td>
</tr>
<tr>
<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 29

* Meets impact of technology requirement.
** Student teaching.

### Four-Year Plan - Dance Education

**Major - BA** *(http://catalog.odu.edu/undergraduate/collegeofartsletters/communicationandtheatrearts/theatreanddance-danceed-ba-fouryearplan)*

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### 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 and Professional Studies or the dance education program advisor. Students must have completed or must complete equivalencies for all course work required for the 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 the Virginia Board of Education prescribed assessment for admission must be completed and on file with the Office of Clinical Experiences prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the Virginia Board of Education prescribed assessment for admission prior to, or during, enrollment in TLED 301.

### Minor in Dance

For a minor in dance, 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.

### Theatre Major

Jim Lyden, Chief Departmental Advisor for Theatre

Majors must have a grade of C or better in all courses required for the major.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEA 225</td>
<td>Introduction to Production Technology</td>
<td>3</td>
</tr>
<tr>
<td>THEA 230</td>
<td>Drama for Production *</td>
<td>3</td>
</tr>
<tr>
<td>THEA 244</td>
<td>Introduction to Production Design</td>
<td>3</td>
</tr>
<tr>
<td>THEA 248</td>
<td>Introduction to Stage Makeup</td>
<td>3</td>
</tr>
<tr>
<td>THEA 252</td>
<td>Acting Two</td>
<td>3</td>
</tr>
<tr>
<td>THEA 343</td>
<td>History of Theatre: Beginnings to the Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>THEA 442</td>
<td>Principles of Directing</td>
<td>3</td>
</tr>
<tr>
<td>THEA 449W</td>
<td>Script and Performance Analysis</td>
<td>3</td>
</tr>
<tr>
<td>THEA/DANC Electives</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Core Requirements 13

Total Hours 52

* Meets oral communication requirement.

As part of the Core Requirements, a minimum of 4 credits of practicum experience to include at least 2 credits of THEA/DANC Production/Performance Lab as production (remaining credits can be production or performance) required.

### Four-Year Plan - Theatre Major - BA *(http://catalog.odu.edu/undergraduate/collegeofartsletters/communicationandtheatrearts/theatreanddance-theatre-ba-fouryearplan)*

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Performance Major

Jim Lyden, Chief Departmental Advisor for Performance

**Admission**

The performance major is intended for students who wish to pursue performance as a career. Students will be admitted to the performance major through an audition and interview process administered by the faculty each spring. No student is guaranteed admittance or continuance in the performance major. Students may return to the theatre major at any time.

**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 major.

### Requirements

Majors must have a grade of C or better in all courses required for the major.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEA 225</td>
<td>Introduction to Production Technology</td>
<td>3</td>
</tr>
<tr>
<td>THEA 230</td>
<td>Drama for Production *</td>
<td>3</td>
</tr>
<tr>
<td>THEA 252</td>
<td>Acting Two</td>
<td>3</td>
</tr>
<tr>
<td>THEA 320</td>
<td>Auditioning Technique</td>
<td>3</td>
</tr>
</tbody>
</table>
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 1 3
THEA 442 Principles of Directing 3
THEA 449W Script and Performance Analysis 3
THEA/DANC Electives 9
Core Requirements 13
Total Hours 52

* Meets oral communication requirement.

As part of the Core Requirements, a minimum of 4 credits of practicum experience to include at least 2 credits of THEA/DANC Production/Performance Lab as production and 2 credits as performance required.

Four-Year Plan - Performance Major - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/communicationandtheatrearts/theatreanddance-performance-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Design/Technology Major
Jim Lyden, Chief Departmental Advisor for Design/Technology

Admission
The design/technology major is intended for students who wish to pursue theatre design/technology as a career. Students will be admitted to the design/technology major 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 major. Students may return to the theatre major at any time.

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 major.

Requirements
Majors must have a grade of C or better in all courses required for the major

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
Nine hours must be selected from following: THEA 246, 248, 321, 325, 341, 345, 349, 351, 353, 354, 356, 357, 368, 369, 395, 495, 497, 498.
THEA/DANC Electives 9
Core Requirements 13
Total Hours 52

* Meets oral communication requirement.

As part of the Core Requirements, a minimum of 4 credits of practicum experience to include at least 3 credits of THEA/DANC Production/Performance Lab as production (remaining 1 credit can be production or performance) required.

Four-Year Plan - Design/Technology Major - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/communicationandtheatrearts/theatreanddance-designtech-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Theatre Education Major
Jim Lyden, Chief Departmental Advisor for Theatre Education

Admission to an Approved Teacher Education Program
Old Dominion University students seeking admission to an approved teacher education program must have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT). For the most current information on the prescribed Virginia Board of Education assessment, visit the Office of Clinical Experiences website, http://www.odu.edu/oce and review the Professional 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 Clinical Experiences.

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 Subject Assessment (formerly Praxis II) Theatre content knowledge. If a Theatre Praxis Subject 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.

Background Clearance Requirement
Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience.
Drama for Production

**Fundamentals of Human Growth and Development: Birth through Adolescence**

**Students with Diverse Learning Needs in the General Education Classroom**

**Four-Year Plan - Theatre Education Major - BA**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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 and Professional Studies or the theatre education program advisor. Students must have completed or must complete equivalencies for all course work required for the theatre 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 scores for the Virginia Board of Education prescribed assessment for admission must be on file with the Office of Clinical Experiences prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the Virginia Board of Education prescribed assessment for admission prior to, or during, enrollment in TLED 301.

**Minor in Theatre**

For a minor in theatre, 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 Production/Performance Lab.

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**

Sheri Reynolds, Chair

Old Dominion University
Kristi Costello, Associate Chair of Writing Studies (general education issues)

The Bachelor of Arts in English requires a minimum of 39 hours in English, in addition to English courses taken to satisfy General Education requirements: ENGL 110C, ENGL 211C or ENGL 221C or ENGL 231C, 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 four courses in the core, two literature electives, one open English elective, and six courses in the concentration. The concentration is one of six areas of emphasis (applied language studies, creative writing, journalism, literature, professional writing, teaching) within the overall Bachelor of Arts program and allows the student to pursue that area in depth. The applied language studies concentration is available both online and face-to-face.  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 and maintain a grade point average of 2.0 in the major to graduate (2.75 in the teaching concentration).

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 |
| DANC 152R | Acting One |
| or THEA 152R | Acting One |
| 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 | 3 |
| 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.

*** English majors satisfy the requirement with ENGL 307T.

**English Major Requirements**

**CORE COURSES (12 Hours)**

| ENGL 307T | Digital Writing | 3 |

**Theory & Analytics**

Select two: 6

| ENGL 325 | Introduction to Rhetorical Studies |
| ENGL 333 | Introduction to Critical Theory |
| ENGL 370 | English Linguistics |

**Writing**

| ENGL 300W | Introduction to Creative Writing |
| ENGL 327W | Advanced Composition |
| ENGL 334W | Technical Writing |
| ENGL 427W | Writing in the Disciplines |

**Required Literature and Cultural Studies Electives (6 hours)**

Select two: 6

| ENGL 301 | Introduction to British Literature I |
| ENGL 302 | Introduction to British Literature II |
| ENGL 303 | Shakespeare’s Histories and Comedies |
| ENGL 304 | Shakespeare’s Tragedies and Poetry |
| ENGL 336 | The Short Story |
| ENGL 340 | American Drama |
| ENGL 342 | Southern Literature |
| ENGL 345 | American Literature to 1860 |
| ENGL 346 | American Literature Since 1860 |
| ENGL 360 | World Literature I |
| ENGL 363 | World Literature II |
| ENGL 407 | Chaucer’s Canterbury Tales |
| ENGL 416 | English Renaissance Drama |
| ENGL 418W | Jewish Writers |
| ENGL 419 | The Harlem Renaissance |
| ENGL 421 | British Literature 1660-1800 |
| ENGL 423 | The Romantic Movement in Britain |
| ENGL 432 | Origins and Early Development of the British Novel to 1800 |
| ENGL 433 | Victorian Literature |
| ENGL 438 | The Twentieth-Century British Novel |
| ENGL 441 | American Travel Literature |
| ENGL 447 | The American Novel to 1920 |
| ENGL 448 | The American Novel 1920 to Present |
| ENGL 459W | New Literatures in English |
| ENGL 461 | Poetry of the Early Twentieth Century |
| ENGL 463W | Women Writers |
| ENGL 464W | Native American Literature |
| ENGL 465W | African American Literature |
| ENGL 466W | Asian American Literature |
| ENGL 492 | Modern World Drama |
| ENGL 493 | Contemporary World Literature |

**Open English Elective**

Select one additional English 300- or 400-level course 3

Total Hours 21

* Grade of C or better required

**Concentration Courses (18 hours)**

Select one of the following options:

**Applied Language Studies**

This concentration is available both online and face-to-face.

| ENGL 350 | Aspects of the English Language |
| ENGL 371W | Communication Across Cultures |

Select three of the following: 9

| ENGL 390 | TESL Methods, Materials, & Assessment |
| 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  Topics in English (linguistics-related independent study)

Select one additional course from the list above or select one approved elective at the 300 or 400 level; for example, Anthropology, World Languages (not World Cultural Studies).

Total Hours 18

Note: Applied Language Studies concentration students must take ENGL 370 in the Theory & Analytics portion of the core.

Creative Writing

ENGL 300W  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

Select one W literature course not taken as literature elective for the major: 3
ENGL 418W  Jewish Writers
ENGL 459W  New Literatures in English
ENGL 463W  Women Writers
ENGL 464W  Native American Literature
ENGL 465W  African American Literature
ENGL 466W  Asian American Literature

Total Hours 18

Note: If ENGL 300W is taken in the core, an additional creative writing craft or workshop course will be required to meet the concentration requirement of six courses.

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 two of the following: 6
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 383  Digital Journalism
ENGL 387  TV News Production
ENGL 454  Creative Nonfiction
ENGL 478  The Craft of Multimedia Journalism
ENGL 481  Advanced Public Relations
ENGL 482  Sports Journalism
ENGL 485W  The Craft of Multimedia Journalism

Total Hours 18

Professional Writing

ENGL 334W  Technical Writing 3
ENGL 435W  Management Writing 3

Select four of the following not taken in the core: 12
ENGL 325  Introduction to Rhetorical Studies
ENGL 327W  Advanced Composition
ENGL 354  Client-Based Research Writing
ENGL 368  Writing Internship
ENGL 381  Public Relations
ENGL 427W  Writing in the Disciplines
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 18
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
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.

Four-Year Plan - English - BA
(http://catalog.odu.edu/undergraduate/collegeofartsletters/english/english-ba-fouryearplan)
This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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 the Teaching and Learning department and Communication Disorders and Special Education department of the Darden College of Education and Professional Studies. 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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, http://www.odu.edu/orce and review the Professional 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 upper-division English courses must be passed with a grade of C- or higher. Lower-division and English W 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 Career and Advising Resource Center in the Darden College of Education and Professional Studies (1107 Education Building).

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. All upper-division 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. 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 Subject Assessment, English Language Arts content knowledge (formerly Praxis II) 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.

Background Clearance Requirement
Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

Virginia Board of Education Prescribed Assessments for Licensure
- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.
- Praxis Subject Assessment, English Language Arts content knowledge (test code #5038)–passing score of 167 required.

To review more information on the Virginia Board of Education prescribed assessments, visit the Office of Clinical Experiences website, www.odu.edu/orce.
Graduation

Requirements for graduation include 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; 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 supersedes the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and from the Office of Clinical Experiences website at www.odu.edu/occ.

Course requirements are as follows:

**Lower-Division General Education**

See list under Bachelor of Arts in English above.

**Major Requirements**

<table>
<thead>
<tr>
<th>CORE COURSES (12 hours)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 307T</td>
<td>Digital Writing</td>
</tr>
<tr>
<td>ENGL 327W</td>
<td>Advanced Composition *</td>
</tr>
<tr>
<td>ENGL 333</td>
<td>Introduction to Critical Theory</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 325</td>
<td>Introduction to Rhetorical Studies</td>
</tr>
<tr>
<td>ENGL 370</td>
<td>English Linguistics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Required Literature Electives (9 hours)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 301</td>
<td>Introduction to British Literature I</td>
</tr>
<tr>
<td>ENGL 303</td>
<td>Shakespeare's Histories and Comedies</td>
</tr>
<tr>
<td>ENGL 304</td>
<td>Shakespeare's Tragedies and Poetry</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 360</td>
<td>World Literature I</td>
</tr>
<tr>
<td>ENGL 363</td>
<td>World Literature II</td>
</tr>
<tr>
<td>ENGL 493</td>
<td>Contemporary World Literature</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 418W</td>
<td>Jewish Writers</td>
</tr>
<tr>
<td>ENGL 459W</td>
<td>New Literatures in English</td>
</tr>
<tr>
<td>ENGL 463W</td>
<td>Women Writers</td>
</tr>
<tr>
<td>ENGL 464W</td>
<td>Native American Literature</td>
</tr>
<tr>
<td>ENGL 465W</td>
<td>African American Literature</td>
</tr>
<tr>
<td>ENGL 466W</td>
<td>Asian American Literature</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teaching Concentration Required Courses (18 hours):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 302</td>
<td>Introduction to British Literature II</td>
</tr>
<tr>
<td>ENGL 345</td>
<td>American Literature to 1860</td>
</tr>
<tr>
<td>ENGL 346</td>
<td>American Literature Since 1860</td>
</tr>
<tr>
<td>ENGL 350</td>
<td>Aspects of the English Language</td>
</tr>
<tr>
<td>ENGL 406</td>
<td>The Teaching of Literature</td>
</tr>
<tr>
<td>ENGL 455</td>
<td>The Teaching of Composition, Grades 6-12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professional Education Courses (33 hours)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment of Education</td>
</tr>
<tr>
<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
</tr>
<tr>
<td>TLED 430W</td>
<td>PK-12 Instructional Technology</td>
</tr>
<tr>
<td>TLED 451</td>
<td>Developing Instructional Strategies for Teaching in the Middle/High School: English</td>
</tr>
</tbody>
</table>

| 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: 72

*Grade of C or better required

**Upper-Division General Education**

Satisfied through professional education sequence.

**Four-Year Plan - English - Teaching Licensure - BA**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Bachelor of Science Degree in Interdisciplinary Studies-Professional Writing Major**

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:

<table>
<thead>
<tr>
<th>Select four of the following:</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL/IDS 307T</td>
<td>Digital Writing</td>
</tr>
<tr>
<td>ENGL 325</td>
<td>Introduction to Rhetorical Studies</td>
</tr>
<tr>
<td>ENGL 327W</td>
<td>Advanced Composition</td>
</tr>
<tr>
<td>ENGL 334W</td>
<td>Technical Writing</td>
</tr>
<tr>
<td>ENGL 354</td>
<td>Client-Based Research Writing</td>
</tr>
<tr>
<td>ENGL 368</td>
<td>Writing Internship</td>
</tr>
<tr>
<td>ENGL 381</td>
<td>Public Relations</td>
</tr>
<tr>
<td>ENGL 427W</td>
<td>Writing in the Disciplines</td>
</tr>
<tr>
<td>ENGL 433W</td>
<td>Management Writing</td>
</tr>
<tr>
<td>ENGL 439</td>
<td>Writing in Digital Spaces</td>
</tr>
<tr>
<td>ENGL 468</td>
<td>Advanced Writing Internship</td>
</tr>
<tr>
<td>ENGL 473</td>
<td>Writing with Video</td>
</tr>
<tr>
<td>ENGL 481</td>
<td>Advanced Public Relations</td>
</tr>
</tbody>
</table>

Total Hours: 12

An overall grade point average of 2.0 or above in all courses specified as a requirement for the certificate is required for the award of the certificate. To apply for the certificate, contact the coordinator of professional writing.

**Certificate in Teaching English as a Second Language (TESL)**

The Teaching English as a Second Language (TESL) certificate provides candidates with specialized knowledge of English language fundamentals and emphasizes the relationship between language and culture, communication across cultures, and how to approach the teaching and assessment of English as a second language (ESL). It is designed for candidates who are pursuing or who hold a teaching license and wish to prepare for adding an ESL endorsement to it or who wish to teach English abroad, work for private businesses and schools, or teach ESL to immigrant...
populations in the USA. In such contexts, candidates will benefit from a solid knowledge of language fundamentals coupled with cross-cultural communication and practical pedagogical training.

The TESL certificate is available to undergraduate students and non-degree seeking professionals who meet the requirements. It can be completed in two modalities: online and face-to-face.

This certificate requires 12 credit hours of coursework from the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 350</td>
<td>Aspects of the English Language</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 442</td>
<td>English Grammar</td>
<td></td>
</tr>
<tr>
<td>ENGL 370</td>
<td>English Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 440</td>
<td>General Linguistics</td>
<td></td>
</tr>
<tr>
<td>ENGL 371W</td>
<td>Communication Across Cultures</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 390</td>
<td>TESL Methods, Materials, &amp; Assessment</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 12

An overall grade point average of 2.0 or above in all courses specified as a requirement for the certificate is required for the award of the certificate. To apply for the certificate, contact the coordinator of Applied Language Studies.

**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 concentration areas are offered, with the general minor and some concentrations also available online. Regardless of emphasis or delivery method, the curriculum is still called a minor in English.

**English: 15 hours selected from 300 and 400-level English courses.**

### Creative Writing: 15 hours selected from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 300W</td>
<td>Introduction to Creative Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 351</td>
<td>Fiction Workshop</td>
<td></td>
</tr>
<tr>
<td>ENGL 352</td>
<td>Poetry Workshop</td>
<td></td>
</tr>
<tr>
<td>ENGL 449</td>
<td>Craft of Literary Nonfiction</td>
<td></td>
</tr>
<tr>
<td>ENGL 451</td>
<td>Advanced Fiction Workshop</td>
<td></td>
</tr>
<tr>
<td>ENGL 452</td>
<td>Advanced Poetry Workshop</td>
<td></td>
</tr>
<tr>
<td>ENGL 454</td>
<td>Creative Nonfiction</td>
<td></td>
</tr>
<tr>
<td>ENGL 456</td>
<td>The Craft of Fiction</td>
<td></td>
</tr>
<tr>
<td>ENGL 457</td>
<td>The Craft of Poetry</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours 15

### Journalism: 15 hours selected from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 335</td>
<td>Editing and Document Design</td>
<td></td>
</tr>
<tr>
<td>ENGL 366</td>
<td>Public Journalism in the Digital Age</td>
<td></td>
</tr>
<tr>
<td>ENGL 368</td>
<td>Writing Internship</td>
<td></td>
</tr>
<tr>
<td>ENGL 380</td>
<td>Reporting and News Writing I</td>
<td></td>
</tr>
<tr>
<td>ENGL 381</td>
<td>Public Relations</td>
<td></td>
</tr>
<tr>
<td>ENGL 382</td>
<td>Reporting News for Television and Digital Media</td>
<td></td>
</tr>
<tr>
<td>ENGL 383</td>
<td>Digital Journalism</td>
<td></td>
</tr>
<tr>
<td>ENGL 454</td>
<td>Creative Nonfiction</td>
<td></td>
</tr>
<tr>
<td>ENGL 481</td>
<td>Advanced Public Relations</td>
<td></td>
</tr>
<tr>
<td>ENGL 482</td>
<td>Sports Journalism</td>
<td></td>
</tr>
<tr>
<td>ENGL 483W</td>
<td>Reporting and News Writing II</td>
<td></td>
</tr>
<tr>
<td>ENGL 484</td>
<td>Feature Story Writing</td>
<td></td>
</tr>
<tr>
<td>ENGL 485W</td>
<td>Editorial and Persuasive Writing</td>
<td></td>
</tr>
<tr>
<td>ENGL 486</td>
<td>Media Law and Ethics</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours 15

### Literature: 15 hours selected from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 301</td>
<td>Introduction to British Literature I</td>
<td></td>
</tr>
<tr>
<td>ENGL 302</td>
<td>Introduction to British Literature II</td>
<td></td>
</tr>
<tr>
<td>ENGL 303</td>
<td>Shakespeare’s Histories and Comedies</td>
<td></td>
</tr>
<tr>
<td>ENGL 304</td>
<td>Shakespeare’s Tragedies and Poetry</td>
<td></td>
</tr>
<tr>
<td>ENGL 333</td>
<td>Introduction to Critical Theory</td>
<td></td>
</tr>
<tr>
<td>ENGL 336</td>
<td>The Short Story</td>
<td></td>
</tr>
<tr>
<td>ENGL 340</td>
<td>American Drama</td>
<td></td>
</tr>
<tr>
<td>ENGL 342</td>
<td>Southern Literature</td>
<td></td>
</tr>
<tr>
<td>ENGL 345</td>
<td>American Literature to 1860</td>
<td></td>
</tr>
<tr>
<td>ENGL 346</td>
<td>American Literature Since 1860</td>
<td></td>
</tr>
<tr>
<td>ENGL 349</td>
<td>The Contemporary American Novel</td>
<td></td>
</tr>
<tr>
<td>ENGL 360</td>
<td>World Literature I</td>
<td></td>
</tr>
<tr>
<td>ENGL 363</td>
<td>World Literature II</td>
<td></td>
</tr>
<tr>
<td>ENGL 407</td>
<td>Chaucer’s Canterbury Tales</td>
<td></td>
</tr>
<tr>
<td>ENGL 416</td>
<td>English Renaissance Drama</td>
<td></td>
</tr>
<tr>
<td>ENGL 418W</td>
<td>Jewish Writers</td>
<td></td>
</tr>
<tr>
<td>ENGL 421</td>
<td>British Literature 1660-1800</td>
<td></td>
</tr>
<tr>
<td>ENGL 423</td>
<td>The Romantic Movement in Britain</td>
<td></td>
</tr>
<tr>
<td>ENGL 432</td>
<td>Origins and Early Development of the British Novel to 1800</td>
<td></td>
</tr>
<tr>
<td>ENGL 433</td>
<td>Victorian Literature</td>
<td></td>
</tr>
<tr>
<td>ENGL 438</td>
<td>The Twentieth-Century British Novel</td>
<td></td>
</tr>
<tr>
<td>ENGL 447</td>
<td>The American Novel to 1920</td>
<td></td>
</tr>
<tr>
<td>ENGL 448</td>
<td>The American Novel 1920 to Present</td>
<td></td>
</tr>
<tr>
<td>ENGL 459W</td>
<td>New Literatures in English</td>
<td></td>
</tr>
<tr>
<td>ENGL 461</td>
<td>Poetry of the Early Twentieth Century</td>
<td></td>
</tr>
<tr>
<td>ENGL 463W</td>
<td>Women Writers</td>
<td></td>
</tr>
<tr>
<td>ENGL 465W</td>
<td>African American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGL 466W</td>
<td>Asian American Literature</td>
<td></td>
</tr>
<tr>
<td>ENGL 492</td>
<td>Modern World Drama</td>
<td></td>
</tr>
<tr>
<td>ENGL 493</td>
<td>Contemporary World Literature</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours 15

### Professional Writing: 15 hours selected from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 307T</td>
<td>Digital Writing</td>
<td></td>
</tr>
<tr>
<td>ENGL 325</td>
<td>Introduction to Rhetorical Studies</td>
<td></td>
</tr>
<tr>
<td>ENGL 327W</td>
<td>Advanced Composition</td>
<td></td>
</tr>
<tr>
<td>ENGL 334W</td>
<td>Technical Writing</td>
<td></td>
</tr>
<tr>
<td>ENGL 354</td>
<td>Client-Based Research Writing</td>
<td></td>
</tr>
<tr>
<td>ENGL 368</td>
<td>Writing Internship</td>
<td></td>
</tr>
<tr>
<td>ENGL 381</td>
<td>Public Relations</td>
<td></td>
</tr>
<tr>
<td>ENGL 427W</td>
<td>Writing in the Disciplines</td>
<td></td>
</tr>
<tr>
<td>ENGL 435W</td>
<td>Management Writing</td>
<td></td>
</tr>
<tr>
<td>ENGL 439</td>
<td>Writing in Digital Spaces</td>
<td></td>
</tr>
<tr>
<td>ENGL 473</td>
<td>Writing with Video</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours 15
### 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication *</td>
<td>6</td>
</tr>
<tr>
<td>ENGL 110C English Composition *</td>
<td></td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture **</td>
<td>0-12</td>
</tr>
<tr>
<td>Information Literacy and Research ***</td>
<td></td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>3</td>
</tr>
<tr>
<td>Impact of Technology ****</td>
<td>0-3</td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 35-50

* 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 304T, HIST 386T or HIST 389T.

### Major Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 100-level electives</td>
<td>6</td>
</tr>
<tr>
<td>Field One: United States History</td>
<td>3</td>
</tr>
<tr>
<td>Field Two: European History</td>
<td>3</td>
</tr>
<tr>
<td>Field Three: Area Studies (Asia, Latin America, Middle East, Russia, Africa)</td>
<td>21</td>
</tr>
<tr>
<td>Field Four: Comparative History</td>
<td></td>
</tr>
</tbody>
</table>

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

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.

### Four-Year Plan - History - BA

(http://catalog.odu.edu/undergraduate/collegeofartsletters/history/history-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

---

*ENGL 481 Advanced Public Relations
*ENGL 484 Feature Story Writing

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.

### 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.
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 Subject Assessment, social studies content knowledge (formerly Praxis II) in order to be admitted to TLED 485 (teacher candidate internship) 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 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 Darden College of Education and Professional Studies. 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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, http://www.odu.edu/oece and review the Professional 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 Clinical Experiences.

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 Subject Assessment, social studies content knowledge (formerly Praxis II) 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.

Background Clearance Requirement

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

Virginia Board of Education Prescribed Assessments for Licensure

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.
- Praxis Subject Assessment, social studies content knowledge (test code 0081) – passing score of 161 required.

To review more information on the Virginia Board of Education prescribed assessments, visit the Office of Clinical Experiences website, www.odu.edu/oece.

Graduation

Requirements for graduation include 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; 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 Office of Clinical Experiences website at www.odu.edu/oece.

Lower-Division General Education

<p>| 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 |
| 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 ****** | 3-6 |
| Human Behavior | 3-6 |</p>
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 200S</td>
<td>Basic Economics</td>
<td></td>
</tr>
<tr>
<td>or ECON 210S/220S</td>
<td>Principles of Macroeconomics and Principles of Microeconomics</td>
<td></td>
</tr>
</tbody>
</table>

**Total Hours:** 35-50

* 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.
**** WCS 100L recommended
***** PHIL 250E recommended.
****** Satisfied by TLED 430W.
******* ECON 200S is recommended; however, ECON 201S together with ECON 202S are acceptable.

## Major Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 201S</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>HIST 102H</td>
<td>Interpreting the European Past</td>
<td>3</td>
</tr>
<tr>
<td>HIST 104H</td>
<td>Interpreting the American Past</td>
<td>3</td>
</tr>
<tr>
<td>HIST 201</td>
<td>Introduction to Historical Methods</td>
<td>3</td>
</tr>
<tr>
<td>HIST 356</td>
<td>Virginia History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 402W</td>
<td>Senior Seminar in History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 300 and 400-level classes</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment of Education</td>
<td>3</td>
</tr>
<tr>
<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>TLED 430W</td>
<td>PK-12 Instructional Technology</td>
<td>3</td>
</tr>
<tr>
<td>TLED 455</td>
<td>Developing Instructional Strategies for Teaching in the Middle/High School: Social Studies</td>
<td>3</td>
</tr>
<tr>
<td>TLED 483</td>
<td>Seminar in Teacher Education</td>
<td>1</td>
</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
<tr>
<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours:** 33

* Satisfies impact of technology requirement.

## History and Social Sciences License Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 100S</td>
<td>Cultural Geography</td>
<td>9</td>
</tr>
<tr>
<td>GEOG 300</td>
<td>Maps and Geographic Information</td>
<td></td>
</tr>
<tr>
<td>GEOG 305</td>
<td>World Resources</td>
<td></td>
</tr>
</tbody>
</table>

## Upper-Division General Education

Students in the secondary education licensure program satisfy the Upper Division General Education requirement through their professional education courses.

## Four-Year Plan - History Major with a License in History/Social Sciences - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/history/historyed-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

## Linked 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. Students in the linked program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree).

## 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 Linked 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:

1. 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.
2. 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**
   - HIST 311 History of the U.S. Mexico Borderlands 3
   - HIST 341 United States Labor and Working Class History 3
   - HIST 353 United States Military History 3
   - HIST 361 United States Labor and Working Class History 3
   - HIST 362 United States Military History 3
   - HIST 363 United States Labor and Working Class History 3

   **Field Two: European History**
   - HIST 311 History of the U.S. Mexico Borderlands 3
   - HIST 341 United States Labor and Working Class History 3
   - HIST 353 United States Military History 3
   - HIST 361 United States Labor and Working Class History 3
   - HIST 362 United States Military History 3
   - HIST 363 United States Labor and Working Class History 3

   **Field Three: Area Studies (Asia, Latin America, Middle East, Russia, Africa)**
   - HIST 311 History of the U.S. Mexico Borderlands 3
   - HIST 341 United States Labor and Working Class History 3
   - HIST 353 United States Military History 3
   - HIST 361 United States Labor and Working Class History 3
   - HIST 362 United States Military History 3
   - HIST 363 United States Labor and Working Class History 3

   **Field Four: Comparative History**
   - HIST 311 History of the U.S. Mexico Borderlands 3
   - HIST 341 United States Labor and Working Class History 3
   - HIST 353 United States Military History 3
   - HIST 361 United States Labor and Working Class History 3
   - HIST 362 United States Military History 3
   - HIST 363 United States Labor and Working Class History 3

   **Total Hours 36**

   * Including the three hours selected for the general education requirement.

   ** Including 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 Readings in Early American History 3
   - HIST 603 The American Revolution and Historical Memory 3
   - HIST 607 A People’s Contest: Civil War and Reconstruction 3
   - HIST 609 Melting Pot? Readings in Immigration History 3
   - HIST 610 Edible History: Food and Drink in the U.S. and Global History 3
   - HIST 611 The Military in America 3
   - HIST 617 The Long Civil Rights Movement 3
   - HIST 619 United States Labor and Working Class History 3

   - HIST 622 The Atlantic Slave Trade 3
   - HIST 621 The Atlantic World and Early America 3
   - HIST 683 History of the Global 1960s 3

   - HIST 631 The Rise of the Hispanic World: Spain and Its Empire 3
   - HIST 636 The British Empire 3
   - HIST 638 European Transnational & International Histories of the 20th Century 3
   - HIST 640 Studies in East Asian History 3
   - HIST 641 Individual & Society in Ancient Greece 3
   - HIST 643 Religion, Culture, and Empire in Greco-Roman Palestine 3
   - HIST 646 Studies in Russian History 3
   - HIST 648 France and the Sea 3
   - HIST 653 Life on the Margins in Medieval Europe 3
   - HIST 655 Early Modern Europe: Religion, Reform, and Violence 3
   - HIST 657 Old Regime and French Revolution 3
   - HIST 658 Studies in European History from 1815-1914 3
   - HIST 659 The British Empire 3
   - HIST 661 North Atlantic Resources 3
   - HIST 662 North Atlantic Resources 3
   - HIST 663 North Atlantic Resources 3
   - HIST 664 North Atlantic Resources 3
   - HIST 665 North Atlantic Resources 3
   - HIST 666 North Atlantic Resources 3
   - HIST 667 North Atlantic Resources 3
   - HIST 668 North Atlantic Resources 3
   - HIST 669 North Atlantic Resources 3
   - HIST 671 World War I in Europe 3
   - HIST 672 Fascism and Nazism 3
   - HIST 674 Holocaust History and Memory 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 627 Cuba and Its Revolution 3
   - HIST 628 History of the U.S. Mexico Borderlands 3
   - HIST 631 The Rise of the Hispanic World: Spain and Its Empire 3
   - HIST 632 Political Order and Social Change in Mexico Since 1910 3
   - HIST 640 Studies in East Asian History 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**

Tim Anderson, Director, Institute for the Humanities
757 683-3823 www.al.odu.edu/hum/

The Institute for the Humanities offers a Master of Arts degree in the Humanities. The program allows students to pursue individualized curricula
that incorporate classes from across ODU’s six colleges and more than 60 standalone graduate programs. The program attracts students with unique research projects and/or career objectives that cannot be fully realized within a single discipline and who will benefit from a cross-disciplinary approach. Students become experts in their field by triangulating courses across different disciplines. Students work closely with the program director to design a coherent program of study that encourages critical thinking, innovation, engaged scholarship and experiential learning.

Concentration areas in the master's program include the following:

1. Cultural and Human Geography
2. Cultural Studies (including critical race studies and refugee studies)
3. Gender and Sexuality Studies
4. Media and Popular Culture Studies
5. Philosophy and Religious Studies
6. Visual Studies (including studio arts and art history)
7. World Cultures

The Institute for the Humanities also offers graduate certificates in Arts and Entrepreneurship, Health and Humanities, and Social Justice and Entrepreneurship.

Linked B.A./B.S.-M.A. Program

Linked Master of Arts in Humanities - Communications, Geography, Interdisciplinary Studies, Philosophy and Religious Studies, Visual Studies, and Women's Studies.

The linked degree programs make it possible for exceptional majors in Art History, Art Studio, Communication, Fine Arts, Geography, Individualized Interdisciplinary Studies, Philosophy, and Women's Studies to take up to 12 hours of graduate courses while completing their undergraduate degree and to gain a head start on a graduate degree. Up to 12 graduate credits taken may be counted toward both the undergraduate and the graduate degree. Students interested in pursuing the linked program should carefully plan their undergraduate course of study considering the requirements of the program.

Admission Requirements

To be admitted to the linked B.A./B.S.-M.A. program, students must declare a major in Art History, Art Studio, Communication, Fine Arts, Geography, Individualized Interdisciplinary Studies, Philosophy and Religious Studies, or Women's Studies 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 linked program, students must have an overall undergraduate GPA of 3.25 or better.

To be admitted to the Certificate programs as an undergraduate, students must be juniors or seniors in any major with a GPA of 3.25 or better. Undergraduates must maintain a 3.5 GPA in certificate-related courses to be able to earn the certificate. Undergraduates must be enrolled in the graduate sections of certificate-related courses for those credits to count toward the certificate.

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 undergraduate advisor for 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, and two letters of recommendation.
3. An application form can be found here (http://www2.odu.edu/forms_admin/viewform.php?formid=19479).

4. 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 History, Art Studio, Communication, Fine Arts, Geography, Individualized Interdisciplinary Studies, Philosophy, and Women's Studies.)

Bridge Courses

Students admitted to the linked 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 fewer 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 linked program.

The M.A. in Humanities

Students in the linked 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 604 Debates in the Digital Humanities 3
   - HUM 692 Humanities Thesis and Non-Thesis Preparation 3

2. All students must either complete a thesis (HUM 699) or project (HUM 693) as their culminating work toward the M.A. degree.
3. No more than 12 hours of graduate credit at the 500-level may be applied to the M.A. in humanities.
4. Students will not be permitted to take any 500-level course that they have already taken at the undergraduate 400 level.
5. Art History/Art Studio 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.
6. 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.
7. 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.
8. 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 at Old Dominion University
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.

9. 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.

10. Upon completion of 36 graduate credits, students will be awarded the M.A. in humanities with a concentration in Cultural and Human Geography, Cultural Studies and Critical Theory, Gender and Sexuality Studies, Interdisciplinary Studies, Media and Popular Culture Studies, Philosophy and Religious Studies, and Visual Studies or World Cultures.

11. For additional information on the M.A. in humanities and the thesis and non-thesis options required to graduate, please refer to the Graduate Catalog (http://catalog.odu.edu/graduate).

**Interdisciplinary Studies**

Virginia Tucker Steffen, Director of Interdisciplinary Programs and Program Coordinator and Advisor, Professional Writing (p. 143)
Michele Mitchell, Chief Departmental Advisor and Assistant Director
Kathleen Fowler, Program Coordinator and Advisor, Individualized Interdisciplinary Studies (p. 135)
Roderick Graham, Program Coordinator and Advisor, Cybercrime (p. 136)
Hongyi Wu, Program Coordinator and Advisor, Cybersecurity (p. 137)
Hongyi Wu, Program Coordinator and Advisor, Cyber Operations (p. 137)
Keven Moberly, Program Coordinator and Advisor, Game Studies and Design (p. 140)
Ike Flory, Program Coordinator and Advisor, General Engineering Technology (p. 141)
Brian Payne, Program Coordinator, Leadership (p. 142)

Interdisciplinary Studies coordinates the administration and delivery of eight degree programs: the Bachelor of Arts and Bachelor of Science in interdisciplinary studies-Individualized Interdisciplinary Studies, (p. 135) the Bachelor of Science in interdisciplinary studies-professional writing (p. 143), cybercrime (p. 136), game studies and design, (p. 140) general engineering technology (p. 141), and leadership (p. 142) programs and the Bachelor of Science in cybersecurity (p. 137) and cyber operations (p. 137) programs. For IDS students, no more than two classes, or six credits, may be counted for both the major and a minor. Topics courses, such as ENGL 395/ENGL 495, COMM 395/COMM 396, etc., must be approved by the student's advisor to ensure that the topic is appropriate for the major.

**BA and BS - Interdisciplinary Studies Major, Individualized Integrative Studies (IIS)**

Bachelor of Arts and Bachelor of Science - Interdisciplinary Studies (IDS) Major, Individualized Integrative Studies (IIS)

http://www.odu.edu/ids/individualized
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**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-12</td>
</tr>
<tr>
<td>Information Literacy</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
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<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
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<tr>
<td>The Nature of Science</td>
<td>8</td>
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<tr>
<td>Impact of Technology</td>
<td>3</td>
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<tr>
<td>Human Behavior</td>
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**Individualized Program Core Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
<th>Hours</th>
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<tr>
<td>IDS 300W</td>
<td>Interdisciplinary Theory and Concepts (C or better required)</td>
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<tr>
<td>ENGL/IDS 307T</td>
<td>Digital Writing</td>
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<td>(Select one of the following): **</td>
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<tr>
<td>IDS 368</td>
<td>Internship in Interdisciplinary Studies</td>
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</tr>
<tr>
<td>IDS 493</td>
<td>IDS Electronic Portfolio Project *</td>
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<tr>
<td>IDS 497</td>
<td>IDS Individualized Senior Project</td>
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</tr>
</tbody>
</table>

**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.

**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. Topics courses, such as ENGL 395/ENGL 495, COMM 395/COMM 396, etc., must be approved by the student's advisor to ensure that the topic is appropriate for the major. No more than two classes, or six credits, may be counted for both the major and a minor.

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://www.odu.edu/ids/individualized.

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**

Met in the major.

**Requirements for Graduation**

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.

**Linked B.A./B.S. in Interdisciplinary Studies - Individualized Integrative Studies and M.A. in Humanities**

The linked B.A./B.S. program in interdisciplinary studies-individualized integrative studies (IIS) and the M.A. in humanities makes it possible for exceptional students whose IIS major is humanities oriented to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree. Students must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Please refer to the Humanities section of this Catalog for additional information on the linked program.

**Bachelor of Science Degree in Interdisciplinary Studies - Cybercrime Major**

**Bachelor of Science Degree in Interdisciplinary Studies - Cybercrime Major**

Roderick Graham, Program Coordinator and Faculty Advisor (rgraham@odu.edu)

This program explores cybercrime from an interdisciplinary perspective that merges the disciplines of criminal justice, computer science, philosophy, and information technology. Students will receive a foundational understanding of crime and criminal justice and more in-depth understanding about cybersecurity, cyber law, and digital forensics. In addition, students will receive a basic introduction to information technology.

While many crimes have decreased over the past 25 years, the one group of crimes that has increased dramatically is cybercrimes. Careers responding to cybercrime have grown tremendously over the past decade. While many of these careers require in-depth understanding about computer engineering and computer science, many careers also require a broader orientation grounded in the social sciences. Across the country there are 350,000 current vacancies in cybersecurity-related careers. Roughly ten percent of those vacancies are in Virginia.

Cybersecurity experts across the world agree that academic programming should be interdisciplinary in nature. While many universities have difficulty developing interdisciplinary majors, the IDS degree at ODU provides a national model that can be used to develop a cybercrime major grounded in the social sciences. ODU’s current cybersecurity and cyber operations majors fill the employment gap for technologically-driven careers. The cybercrime major will fill the employment gap in the area of policy- and legal-driven careers.

**Lower-Division General Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (Math 102M or Math 103M required)</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research (can be met by PHIL 290G)</td>
<td>0-3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics (can be met by PHIL 355E)</td>
<td>0-3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>Impact of Technology (can be met in the major by CYSE 200T/IT 200T or IT 360T)</td>
<td>0-3</td>
</tr>
<tr>
<td>Human Behavior (met in the major by CRJS 215S)</td>
<td>5</td>
</tr>
</tbody>
</table>

**Interdisciplinary Studies Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS 300W Interdisciplinary Theory and Concepts (grade of C or higher required)</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 368 Cybersecurity Internship</td>
<td>3</td>
</tr>
<tr>
<td>or CYSE 494 Entrepreneurship in Cybersecurity</td>
<td>3</td>
</tr>
<tr>
<td>IDS 493 IDS Electronic Portfolio Project</td>
<td>3</td>
</tr>
</tbody>
</table>

**Cybercrime Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJS 405 Cybercrime and Cybersecurity</td>
<td>3</td>
</tr>
<tr>
<td>CYSE/CRJS 406 Cyber Law</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 407 Digital Forensics</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 290G Philosophy of Digital Culture</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 355E Cybersecurity Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Criminology Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJS 215S Introduction to Criminology</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 222 The Criminal Justice System</td>
<td>3</td>
</tr>
<tr>
<td>SOC 337 Introduction to Social Research</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJS 320 Law and Social Control</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 323 Police in American Society</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 340 White-Collar Crime</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 344 Social Science and Crime Mapping</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 415 Courtroom As a Social System</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 421 Deviant Behavior</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 462 Substantive Criminal Law</td>
<td>3</td>
</tr>
</tbody>
</table>

**Technical Base**

Select three from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT/CYSE 200T Cybersecurity, Technology, and Society</td>
<td>3</td>
</tr>
<tr>
<td>IT 205 Introduction to Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT 360T Principles of Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>CS 150 Problem Solving and Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 250 Basic Cybersecurity Programming and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 300 Introduction to Cybersecurity</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 170 Introduction to Computer Architecture I</td>
<td>3</td>
</tr>
<tr>
<td>CS 250 Problem Solving and Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 301 Cybersecurity Techniques and Operations</td>
<td>3</td>
</tr>
<tr>
<td>IT 315 Introduction to Networking and Security</td>
<td>3</td>
</tr>
</tbody>
</table>
The interdisciplinary minor in cybercrime provides students with an understanding of crime and deviance in the digital environment. Students will be required to take two introductory courses in the cybercrime and cybersecurity majors, respectively. In these core courses, students will learn the fundamental issues involved in cybersecurity (computer system architectures, critical infrastructures, cyber threats and vulnerabilities) and cybercrime (defining and describing the different types of computer-related crimes, the techniques used by law enforcement, and the legal issues inherent in combating cybercrime). They can then expand their knowledge by taking electives in psychology, political science, criminal justice, information technology, or cybersecurity. The minor aspires to develop graduates who can think critically about how human behavior impacts and is impacted by computer technologies.

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.

Four-Year Plan - IDS - Cybercrime Major - BS (http://catalog.odu.edu/undergraduate/collegeofartsletters/interdisciplinarystudies/cybercrime/ids-cybercrime-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Cybercrime Interdisciplinary Minor

Roderick Graham, Program Coordinator and Faculty Advisor (rgraham@odu.edu)

The interdisciplinary minor in cybercrime provides students with an understanding of crime and deviance in the digital environment. Students will be required to take two introductory courses in the cybercrime and cybersecurity majors, respectively. In these core courses, students will learn the fundamental issues involved in cybersecurity (computer system architectures, critical infrastructures, cyber threats and vulnerabilities) and cybercrime (defining and describing the different types of computer-related crimes, the techniques used by law enforcement, and the legal issues inherent in combating cybercrime). They can then expand their knowledge by taking electives in psychology, political science, criminal justice, information technology, or cybersecurity. The minor aspires to develop graduates who can think critically about how human behavior impacts and is impacted by computer technologies.

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.

Prerequisite

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJS 215S</td>
<td>Introduction to Criminology</td>
<td>6</td>
</tr>
</tbody>
</table>

Core

- CRJS 405 Cybercrime and Cybersecurity
- CYSE 300 Introduction to Cybersecurity

Electives

- CRJS 340 White-Collar Crime
- CRJS 344 Social Science and Crime Mapping
- IT 315 Introduction to Networking and Security
- IT 360T Principles of Information Technology
- CRJS/CYSE 406 Cyber Law
- CRJS 395/396/495/496 Topics in Criminal Justice
- CYSE 407 Digital Forensics
- PHIL 355E Cybersecurity Ethics
- PSYC 307 Institutionalization of Human-Centered Computing
- PSYC 344 Human Factors
- POLS 350T Technology and War

Total Hours 12

* Not included in the calculation of the grade point average for the minor.

** The two courses from the core and the two electives must be selected from at least two different disciplines with no more than six credits from any one discipline.

*** Must be approved by the program coordinator.

Digital Forensics Certificate

A certificate in Digital Forensics is available. Please refer to the School of Continuing Education (https://www.odu.edu/cepd) for specific information.

Bachelor of Science in Cybersecurity

Bachelor of Science - Cyber Operations Major

Hongyi Wu, Program Coordinator and Faculty Advisor (h1wu@odu.edu)

Cyber Operations is an interdisciplinary major encompassing the entire scope of cyberspace and related operations that are both technical and non-technical (i.e., ethical, legal, human-centered, etc.) in nature. Cyber Operations is a complementary discipline to Cybersecurity. Cyber Operations places a particular emphasis on technologies and techniques applicable to all operational and system levels. Coursework in Cyber Operations balances theory, practice and hands-on labs inspired by real-life scenarios. Skills and competencies emphasized are in system attack, infiltration, exploitation, defense, mitigation, and recovery.

Graduates of the Bachelor of Science degree with the Cyber Operations major will have the skills and proficiencies that are critical to intelligence, military and law enforcement organizations authorized to perform these
specialized operations. Therefore, they will play a role in the enhancement of the national security posture of the nation.

**Lower-Division General Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (MATH 211 and MATH 212 required)</td>
<td>8</td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics (met in the major by PHIL 355E)</td>
<td>8</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td></td>
</tr>
<tr>
<td>Impact of Technology (met in the major by CYSE 200T)</td>
<td></td>
</tr>
<tr>
<td>Human Behavior (CRJS 215S or SOC 2015 required)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Prerequisites**

- CS 150  Problem Solving and Programming I
- CS 170  Introduction to Computer Architecture I
- CS 250  Problem Solving and Programming II
- CS 252  Introduction to Unix for Programmers
- CS 270  Introduction to Computer Architecture II
- ECE 241  Fundamentals of Computer Engineering
- ECE 304  Probability, Statistics, and Reliability

**Core Courses**

- CYSE 200T Cybersecurity, Technology, and Society
- CYSE 301 Cybersecurity Techniques and Operations
- CYSE 425W Cybersecurity Strategy and Policy
- CYSE/CYJS 406 Cyber Law

**Major Coursework**

- CS 361  Data Structures and Algorithms
- CS 390  Introduction to Theoretical Computer Science
- CS 466  Principles and Practice of Cyber Defense
- CS 467  Introduction to Reverse Software Engineering
- CS 471  Operating Systems
- CYSE 368  Cybersecurity Internship
- CYSE 493  IDS Electronic Portfolio Project
- ECE 346  Microcontrollers
- ECE 355  Introduction to Networks and Data Communications
- ECE 416  Cyber Defense Fundamentals
- ECE 419  Cyber Physical System Security
- ECE 455  Network Engineering and Design
- MSIM 470  Foundations of Cyber Security
- PHIL 355E Cybersecurity Ethics

**Approved Program Electives (Choose two)**

- CS 476  Systems Programming
- CYSE 407  Digital Forensics
- ECE 483  Embedded Systems
- IT 417  Management of Information Security

**Elective Credit as Needed for the Required 120 Credit Hours**

- Total Hours: 120-126

* Grade of C or better required in both written communication courses and in ENGL 110C before declaring major. ENGL 231C is recommended as the second written communication course.

**Upper-Division General Education**

Met through 300/400-level prerequisite courses.

**Requirements for Graduation**

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.

**Four-Year Plan - Cyber Operations Major**


This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Bachelor of Science - Cybersecurity Major**

Saltuk Karahan, Program Coordinator and Advisor
ccser@odu.edu

The Bachelor of Science degree with a major in cybersecurity provides opportunities for students to integrate education and training with the application of problem-solving skills in the lab environment. Courses are drawn from the disciplines of philosophy, computer science, computer engineering, information technology, and criminal justice to examine the multi-faceted nature of cybersecurity. Students admitted to the program have a variety of credit options including portfolio review, CLEP, DANTES, and departmental exams. For more information about the cybersecurity interdisciplinary program, email ccser@odu.edu or Professor Hongyi Wu (h1wu@odu.edu).

No more than two classes, or six credits, may be counted for both the major and a minor.

**Lower-Division General Education**

- Written Communication * | 6
- Oral Communication       | 3
- Mathematics (MATH 162M required)** | 3
- Language and Culture     | 0-6
- Information Literacy and Research | 3
- Human Creativity         | 3
- Interpreting the Past    | 3
- Literature               | 3
- Philosophy and Ethics (can be met by PHIL 355E) | 0-3
- The Nature of Science    | 8
- Impact of Technology (met with CYSE 200T/IT 200T in the major) | 3

**Prerequisite Courses**

Students may be required to complete an additional 15-36 hours of prerequisite courses depending on which Principles and Application courses they select.

**Interdisciplinary Writing Course**

- IDS 300W  Interdisciplinary Theory and Concepts | 3

**Core Courses**

- CYSE 200T  Cybersecurity, Technology, and Society | 21
- CYSE 250  Basic Cybersecurity Programming and Networking | 3
- CYSE 300  Introduction to Cybersecurity | 3

Old Dominion University  138
Bachelor of Science in Cybersecurity

Four-Year Plan - Cybersecurity - BS
(http://catalog.odu.edu/undergraduate/collegeofartsletters/interdisciplinarystudies/bs-ids---cybersecurity/cybersecurity-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Interdisciplinary Minor - Cybersecurity
Saltuk Karahan, Department of Political Science and Geography, Coordinator (skarahan@odu.edu)

This interdisciplinary minor in cybersecurity is focused on the technological, structural, social, and legal frameworks used to secure computer networks and software. The study of cybersecurity combines multiple fields including computer science, engineering, information technology, criminal justice, and philosophy, to name a few. In an effort to promote the security of computer networks, software, and cyber information, an interdisciplinary understanding about technological, legal, philosophical, and structural aspects of cyber crime is needed. This minor will provide students from different majors the knowledge they need to prevent or respond to cyber incidents they are likely to encounter in their careers.

Course options are as follows:

- CRJS 405 Cybercrime and Cybersecurity
- CS 462 Cybersecurity Fundamentals
- or ECE/MSIM 411 Cyber Defense Fundamentals
- CS 463 Cryptography for Cybersecurity
- CS 464 Networked Systems Security
- or ECE/MSIM 470 Foundations of Cyber Security
- CS 465 Information Assurance
- CS 300 Introduction to Cybersecurity
- CYSE 301 Cybersecurity Techniques and Operations
- CYSE 406 Cyber Law
- CYSE 407 Digital Forensics
- ECE 416 Cyber Defense Fundamentals
- or MSIM 416 Secure and Trusted Operating Systems
- ECE 417 Secure and Trusted Operating Systems
- or MSIM 417 Cyber Physical System Security
- ECE 419 Cyber Physical System Security
- FIN 443 Enterprise Risk Management

**Selected upper-division ECE and MSIM courses.**
The interdisciplinary minor in cybersecurity 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 Degree in Interdisciplinary Studies - Game Studies and Design Major**

**Bachelor of Science Degree in Interdisciplinary Studies - Game Studies and Design Major**

Kevin Moberly, Program Coordinator and Advisor

The interdisciplinary studies Game Studies and Design major is for students who are interested in three specific aspects of game production and criticism (programming, designing, or studying games and game-related productions), but who are also interested in a larger understanding of the game design and development process. Students may choose a focus in either Development and Criticism or Design and Criticism.

Graduates of this undergraduate degree will be strong candidates for jobs in the mainstream gaming industry, game journalism, and graduate programs in game studies.

**Lower-Division General Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>Written Communication</td>
<td>6</td>
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<tr>
<td>COMM 101</td>
<td>Oral Communication</td>
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<tr>
<td>MATH 102M or MATH 103M</td>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>IDS 300W</td>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>IDS 300W</td>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>IDS 300W</td>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>IDS 300W</td>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>IDS 300W</td>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>IDS 300W</td>
<td>Philosophy and Ethics</td>
<td>0-3</td>
</tr>
<tr>
<td>IDS 300W</td>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>IDS 300W</td>
<td>Impact of Technology</td>
<td>0-3</td>
</tr>
<tr>
<td>IDS 300W</td>
<td>Human Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours** 35-47

* Grade of C or better required in both courses and in ENGL 110C and before declaring major.
** May be met by PHIL 355E.
*** May be met by IDS 307T/ENGL 307T.

**Interdisciplinary Studies Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>IDS 300W</td>
<td>Interdisciplinary Theory and Concepts</td>
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Select two of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS/ENGL 307T</td>
<td>Digital Writing</td>
</tr>
<tr>
<td>IDS 368</td>
<td>Internship in Interdisciplinary Studies</td>
</tr>
</tbody>
</table>

**Total Hours** 9

**Upper-Division General Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS 493</td>
<td>IDS Electronic Portfolio Project</td>
</tr>
</tbody>
</table>

**Total Hours** 27

**Game Studies and Design - Development and Criticism Focus**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME 201T</td>
<td>Introduction to Game Studies</td>
</tr>
<tr>
<td>GAME 240</td>
<td>Game Criticism</td>
</tr>
<tr>
<td>GAME 450</td>
<td>Game Development and Design Workshop</td>
</tr>
<tr>
<td>CS 150</td>
<td>Problem Solving and Programming I</td>
</tr>
<tr>
<td>CS 250</td>
<td>Problem Solving and Programming II</td>
</tr>
<tr>
<td>MATH 163</td>
<td>Precalculus II</td>
</tr>
</tbody>
</table>

Select three of the following: 7-9

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>CS 252</td>
<td>Introduction to Unix for Programmers</td>
</tr>
<tr>
<td>CS 330</td>
<td>Object-Oriented Programming and Design</td>
</tr>
<tr>
<td>CS 361</td>
<td>Data Structures and Algorithms</td>
</tr>
<tr>
<td>CS 460</td>
<td>Computer Graphics</td>
</tr>
<tr>
<td>ECE 407</td>
<td>Introduction to Game Development</td>
</tr>
<tr>
<td>GAME/ENTR 494</td>
<td>Entrepreneurship in Game Studies, Development, and Design</td>
</tr>
<tr>
<td>IT 205</td>
<td>Introduction to Object-Oriented Programming</td>
</tr>
<tr>
<td>IT 310</td>
<td>Object-Oriented Programming with C++</td>
</tr>
<tr>
<td>IT 374</td>
<td>C# and Applications</td>
</tr>
<tr>
<td>PHIL 355E</td>
<td>Cybersecurity Ethics</td>
</tr>
</tbody>
</table>

**Total Hours** 27-29

**Game Studies and Design - Design and Criticism Focus**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAME 201T</td>
<td>Introduction to Game Studies</td>
</tr>
<tr>
<td>GAME 240</td>
<td>Game Criticism</td>
</tr>
<tr>
<td>GAME 450</td>
<td>Game Development and Design Workshop</td>
</tr>
<tr>
<td>ARTS 204</td>
<td>Foundational Concepts in Studio Art</td>
</tr>
<tr>
<td>COMM 260</td>
<td>Understanding Media</td>
</tr>
<tr>
<td>ENGL 355</td>
<td>Game Design and Rhetoric</td>
</tr>
</tbody>
</table>

Select three of the following: 9

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 211</td>
<td>Ancient and Medieval Art</td>
</tr>
<tr>
<td>ARTH 212</td>
<td>Renaissance and Modern Art</td>
</tr>
<tr>
<td>ARTH 230</td>
<td>Twentieth Century Modern Art</td>
</tr>
<tr>
<td>ARTH 360</td>
<td>Asian Art</td>
</tr>
<tr>
<td>ARTS 203</td>
<td>Three-Dimensional Design</td>
</tr>
<tr>
<td>ARTS 231</td>
<td>Drawing: Fundamentals of Drawing</td>
</tr>
<tr>
<td>COMM 325</td>
<td>Sound Design for Stage and Camera</td>
</tr>
<tr>
<td>COMM 340</td>
<td>Media and Popular Culture</td>
</tr>
<tr>
<td>COMM 353</td>
<td>Animation</td>
</tr>
<tr>
<td>ENGL 338</td>
<td>Writing for Games</td>
</tr>
<tr>
<td>ENGL 439</td>
<td>Writing in Digital Spaces</td>
</tr>
<tr>
<td>GAME 333</td>
<td>Game Balance, Rules, and Mechanics</td>
</tr>
<tr>
<td>GAME 466</td>
<td>World Building</td>
</tr>
<tr>
<td>GAME/ENTR 494</td>
<td>Entrepreneurship in Game Studies, Development, and Design</td>
</tr>
<tr>
<td>PHIL 355E</td>
<td>Cybersecurity Ethics</td>
</tr>
<tr>
<td>PHIL 383T</td>
<td>Technology: Its Nature and Significance</td>
</tr>
<tr>
<td>PHIL 400</td>
<td>Philosophy and Video Games</td>
</tr>
</tbody>
</table>

**Total Hours** 27

**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
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 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.

Four-Year Plan - IDS - Game Studies and Design Major - BS
(http://catalog.odu.edu/undergraduate/collegeofartsletters/interdisciplinarystudies/bs-ids--gamesstudiesanddesign/ids-gamestudiesanddesign-bs-fouryearplan)
This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Bachelor of Science Degree in Interdisciplinary Studies - General Engineering Technology Major

Bachelor of Science Degree in Interdisciplinary Studies - General Engineering Technology Major
Ike Flory, Program Coordinator and Advisor
The IDS Bachelor of Science degree 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), U.S. Air Force Associate to Baccalaureate Cooperative (ABC), Servicemembers Opportunity College (SOC), and Navy College Program for Afloat Education (NCPACE). The general engineering technology degree program is not accredited by the Engineering Technology Accreditation Commission of ABET.
To be eligible for the program, students must have earned 21 military credits related to electrical or mechanical engineering technology. These credits are required to declare the major and satisfy the technical base requirement.

General Education and Major Requirements
The following table details the required general education courses and major requirements. All of the upper-division (300/400 level) courses in the major are available by distance learning in multiple formats, making the program accessible from any location. No more than two classes, or six credits, may be counted for both the major and a minor.

Technical Base * 21
Lower-Division General Education (43-52 credits)
Written Communication ** 6
Oral Communication 3
Mathematics (MATH 211 required) 4
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 (PHYS 111N-PHYS 112N and CHEM 121N-CHEM 122N required) 12
Impact of Technology *** 0-3
Human Behavior 3

Interdisciplinary Studies Core 9
IDS 300W Interdisciplinary Theory and Concepts (grade of C or higher required) ****
Select two of the following:
ENGL/IDS 307T Digital Writing
IDS 368 Internship in Interdisciplinary Studies
IDS 493 IDS Electronic Portfolio Project ****

Civil Engineering Technology 6
CET 200 Statics
CET 220 Strength of Materials

Electrical Engineering Technology 12
EET 350 Fundamentals of Electrical Technology
EET 360 Electrical Power and Machinery
EET 410 Communication Principles (CD-Rom only)
or EET 370T Energy and the Environment
EET 415 Programmable Machine Controls (CD-Rom only)
or EET 363 Introduction to PLC

Mechanical Engineering Technology 9
MET 300 Thermodynamics
MET 310 Dynamics
MET 330 Fluid Mechanics

Upper-Division General Education (minimum) 6
Free Electives 8-14
Total Hours 120-126

* Required to declare the major.
** Grade of C or better required in both courses and in ENGL 110C and before declaring major.
*** Can be met by ENGL 307T/IDS 307T or EET 370T.
**** Offered online only.

Electives
Elective courses may be needed to meet the minimum of 120 credits required for the degree.

Upper-Division General Education
The ENMA minor is recommended, but not required. Students may choose another minor or Option D (Two Upper-Division courses outside the College and not required by the major) to meet the requirement. Upper-Division General Education is automatically satisfied for students obtaining a second bachelor's degree.

Requirements for Graduation
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.
The interdisciplinary studies degree programs at Old Dominion University are for students who are interested in two or more fields of study that do not fit easily into a traditional college department. The major in Leadership is a flexible, interdisciplinary academic degree that focuses on characteristics and skills necessary to lead in organizational and social contexts, and will emphasize ethical leadership, legal issues, and written and oral communication skills. A goal of this new program is to facilitate adult students to complete their degree and as such, there is inherent flexibility in transferring existing credit. A hybrid of on-line and traditional on-campus classes results in a very flexible curriculum. Seventy five percent of courses in this major are offered on-line.

Graduates of this undergraduate degree will possess the core liberal arts skills and knowledge such as reasoning, communications and analysis that are crucial to the challenges employers, organizations and governments face. The academic and critical thinking skills taught through the Leadership curriculum are valuable on the job as well as navigating modern changes and challenges.

This Leadership major is offered through the College of Arts & Letters and coordinated with the School of Continuing Education. The program provides opportunities for students to integrate education and training with the application of problem-solving skills through a senior interdisciplinary project. Courses are drawn from the disciplines of communication, criminal justice, engineering management, environmental health, finance, human services, management, public administration, and philosophy to examine the multi-faceted nature of leadership. Students admitted to the program have a variety of credit options including portfolio review, CLEP, DANTES, and departmental exams.

Topics courses, such as ENGL 395/ENGL 495, COMM 395/COMM 396, etc., must be approved by the student's advisor to ensure that the topic is appropriate for the major. No more than two classes, or six credits, may be counted for both the major and a minor.

**Four-Year Plan - IDS - General Engineering Technology Major - BS**
(http://catalog.odu.edu/undergraduate/collegeofartsletters/interdisciplinarystudies/bs-ids----general-engineering-technology/ids-generalengtech-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Bachelor of Science Degree in Interdisciplinary Studies - Leadership Major**

**Bachelor of Science Degree in Interdisciplinary Studies - Leadership Major**

Brian Payne, Program Coordinator (bpayne@odu.edu)  
Michele Mitchell, Program Advisor (mmitchel@odu.edu)

The interdisciplinary studies degree programs at Old Dominion University are for students who are interested in two or more fields of study that do not fit easily into a traditional college department. The major in Leadership is a flexible, interdisciplinary academic degree that focuses on characteristics and skills necessary to lead in organizational and social contexts, and will emphasize ethical leadership, legal issues, and written and oral communication skills. A goal of this new program is to facilitate adult students to complete their degree and as such, there is inherent flexibility in transferring existing credit. A hybrid of on-line and traditional on-campus classes results in a very flexible curriculum. Seventy five percent of courses in this major are offered on-line.

Graduates of this undergraduate degree will possess the core liberal arts skills and knowledge such as reasoning, communications and analysis that are crucial to the challenges employers, organizations and governments face. The academic and critical thinking skills taught through the Leadership curriculum are valuable on the job as well as navigating modern changes and challenges.

This Leadership major is offered through the College of Arts & Letters and coordinated with the School of Continuing Education. The program provides opportunities for students to integrate education and training with the application of problem-solving skills through a senior interdisciplinary project. Courses are drawn from the disciplines of communication, criminal justice, engineering management, environmental health, finance, human services, management, public administration, and philosophy to examine the multi-faceted nature of leadership. Students admitted to the program have a variety of credit options including portfolio review, CLEP, DANTES, and departmental exams.

Topics courses, such as ENGL 395/ENGL 495, COMM 395/COMM 396, etc., must be approved by the student's advisor to ensure that the topic is appropriate for the major. No more than two classes, or six credits, may be counted for both the major and a minor.

**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
- Philosophy and Ethics ** 0-3
- The Nature of Science 8
- Impact of Technology *** 0-3
- Human Behavior 3

**Interdisciplinary Studies Core**

- IDS 300W Interdisciplinary Theory and Concepts (grade of C or higher required) ****
- Select two of the following:
  - ENGL/IDS 307T Digital Writing
  - IDS 368 Internship in Interdisciplinary Studies or IDS 494 Entrepreneurship in Interdisciplinary Studies
  - IDS 493 IDS Electronic Portfolio Project ****

**Ethical Leadership**

- 6
- Select two of the following:
  - CPS 410 Leadership Ethics ****
  - ENMT 480 Ethics and Philosophy in Engineering Applications
  - MGMT 414 Ethics and Social Issues in Administration
  - PAS 301 Ethics, Governance and Accountability in Public Service ****
  - PHIL 303E Business Ethics

**Communication Skills and Leadership**

- 6
- Select two of the following:
  - COMM 351 Interpersonal Communication in Organizations
  - COMM 355 Organizational Communication
  - COMM 421 Communication and Conflict Management
  - CPS 414 Design Thinking for Leaders ****
  - ENGL 334W Technical Writing ****
  - ENGL 435W Management Writing
  - MGMT 330 Organizational Behavior
  - MGMT 452 Negotiations and Change Management

**Legal Issues**

- 6
- Select two of the following:
  - CPS 412 Leadership and Law ****
  - CRJS 406 Cyber Law
  - or
  - CPS 406 Cyber Law ****
  - CRJS 448 Women, Sex Discrimination and the Law
  - ENVH 402W Environmental and Occupational Health Administration and Law
  - ENVH 425 Occupational Safety and Health Program Management
  - FIN 331 Legal Environment of Business
  - IT 417 Management of Information Security
  - MGMT 417 Employment Law

**Leadership Electives**

- 9
- Select three classes from at least two different disciplines:
  - CPS 400 Foundations of Leadership ****
  - CPS 408 Global Leadership ****
  - CPS 415 Women in Leadership ****
  - CPS 416 Trends and Issues in Leadership ****
  - ENMA 301 Introduction to Engineering Management
  - ENMA 401 Project Management
  - ENMA 444 Leading Engineering Organizations
  - HLTH 425 Leadership and Management for Health Professionals
  - IT 360T Principles of Information Technology
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and Management</td>
</tr>
<tr>
<td>MGMT 340</td>
<td>Human Resources Management</td>
</tr>
<tr>
<td>MGMT 350</td>
<td>Employee Relations Problems and Practices</td>
</tr>
<tr>
<td>MGMT 426</td>
<td>Entrepreneurship: New Ventures Creation</td>
</tr>
<tr>
<td>OPMT 303</td>
<td>Operations Management</td>
</tr>
<tr>
<td>PAS 409</td>
<td>Leadership and Cultural Competence</td>
</tr>
<tr>
<td>PSYC 303</td>
<td>Industrial/Organizational Psychology</td>
</tr>
<tr>
<td>PSYC 307</td>
<td>Institutionalization of Human-Centered Computing</td>
</tr>
<tr>
<td>PSYC 345</td>
<td>Organizational Psychology</td>
</tr>
</tbody>
</table>

**Total Hours:** 71-83

* Grade of C or better required in both courses and in ENGL 110C and before declaring major.
** Can be met by PHIIL 303E.
*** Can be met by ENGL 307T/IDS 307T, IT 360T or STEM 370T.
**** Offered online only.

**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**

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.

**Four-Year Plan - IDS - Leadership Major - BS**

http://catalog.odu.edu/undergraduate/collegeofartsletters/interdisciplinarystudies/bs-ids---leadership/ids-leadership-bs-fouryearplan

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Bachelor of Science Degree in Interdisciplinary Studies - Professional Writing Major**

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 as follows.**

**Lower-Division General Education and Major Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>0-3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>Impact of Technology</td>
<td>3</td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

**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 PHIIL 303E.
**** Met by ENGL 307T.

**Interdisciplinary Studies Core Courses required of all students**

(required grade of C or better in IDS 300W and C- or better in the remaining courses)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL/IDS 307T</td>
<td>Digital Writing (meets impact of technology requirement)</td>
<td>3</td>
</tr>
<tr>
<td>IDS 300W</td>
<td>Interdisciplinary Theory and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>IDS 493</td>
<td>IDS Electronic Portfolio Project</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours:** 9

* Offered online only.

**Professional Writing Core Courses required of all students**

(required grade of C or better)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 325</td>
<td>Introduction to Rhetorical Studies</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 327W</td>
<td>Advanced Composition</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 334W</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours:** 9

**Organizational Foundations** (required grade of C- or better; meets upper-division general education)

Select three from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 303</td>
<td>Introduction to Public Relations</td>
<td>9</td>
</tr>
<tr>
<td>COMM 304</td>
<td>Advanced Public Speaking</td>
<td></td>
</tr>
<tr>
<td>COMM 305</td>
<td>Professional Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 308W</td>
<td>Public Relations Writing</td>
<td></td>
</tr>
<tr>
<td>COMM 351</td>
<td>Interpersonal Communication in Organizations</td>
<td></td>
</tr>
<tr>
<td>COMM 355</td>
<td>Organizational Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 400W</td>
<td>Intercultural Communication</td>
<td></td>
</tr>
<tr>
<td>CS 300T</td>
<td>Computers in Society</td>
<td></td>
</tr>
</tbody>
</table>
### Additional Hours in Professional Writing (required grade of C- or better)

Select three from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 335</td>
<td>Editing and Document Design</td>
</tr>
<tr>
<td>ENGL 350</td>
<td>Aspects of the English Language</td>
</tr>
<tr>
<td>ENGL 354</td>
<td>Client-Based Research Writing</td>
</tr>
<tr>
<td>ENGL 368</td>
<td>Writing Internship</td>
</tr>
<tr>
<td>ENGL 370</td>
<td>English Linguistics</td>
</tr>
<tr>
<td>ENGL 371W</td>
<td>Communication Across Cultures</td>
</tr>
<tr>
<td>ENGL 380</td>
<td>Reporting and News Writing I</td>
</tr>
<tr>
<td>ENGL 381</td>
<td>Public Relations</td>
</tr>
<tr>
<td>ENGL 395/396</td>
<td>Topics in English</td>
</tr>
<tr>
<td>ENGL 427W</td>
<td>Writing in the Disciplines</td>
</tr>
<tr>
<td>ENGL 435W</td>
<td>Management Writing</td>
</tr>
<tr>
<td>ENGL 439</td>
<td>Writing in Digital Spaces</td>
</tr>
<tr>
<td>ENGL 468</td>
<td>Advanced Writing Internship</td>
</tr>
<tr>
<td>ENGL 477</td>
<td>Language, Gender and Power</td>
</tr>
<tr>
<td>ENGL 481</td>
<td>Advanced Public Relations</td>
</tr>
<tr>
<td>ENGL 485W</td>
<td>Editorial and Persuasive Writing</td>
</tr>
<tr>
<td>ENGL 486</td>
<td>Media Law and Ethics</td>
</tr>
<tr>
<td>ENGL 495/496</td>
<td>Topics in English</td>
</tr>
</tbody>
</table>

**Total Hours: 9**

**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

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 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.

---

**Four-Year Plan - IDS - Professional Writing - BS**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### International Studies

**Web Site:** [http://www.odu.edu/intlstudies](http://www.odu.edu/intlstudies)

Timothy Kidd, Director and Chief Program Advisor
Ana Marku, Assistant Program Advisor

### 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 world 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 and Major Requirements

- **Written Communication:** 6
- **Oral Communication:** 3
- **Mathematics:** 3
- **Language and Culture (satisfied in the major):** 3
- **Information Literacy and Research:** 3
- **Human Creativity:** 3
- **Interpreting the Past (satisfied in the major):** 3
- **Literature:** 3
  - WCS 100L Introduction to World Literatures and Cultures (required)
- **Philosophy and Ethics:** 3
- **The Nature of Science:** 8
- **Impact of Technology:** 3
- **Human Behavior (satisfied in the major):**

### Foundation Courses

- GEOG 250 World Regional Geography ***
- or GEOG 100S Cultural Geography
- ECON 201S Principles of Macroeconomics
- HIST 100H Interpreting the World Past Since 1500 ***
- or HIST 101H Interpreting the Asian Past
- or HIST 102H Interpreting the European Past
- or HIST 103H Interpreting the Latin America Past
- or HIST 105H Interpreting the African Past
- or HIST 127H Honors: Interpreting the European Past
- POLS 100S or POLS 102S Introduction to International Politics ***
- or Introduction to Comparative Government and Politics

### Core Courses

- **Foreign Language:** 18-21
- **Methods Course Work:** 3

Select one of the following:

---

Old Dominion University 144
International Studies

**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**

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.

**Four-Year Plan - International Studies - BA**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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://www.odu.edu/intlstudies](http://www.odu.edu/intlstudies). 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.

---

**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.
**Research Design**

**Political Geography**

18-21

**International Political Economy**

Senior Seminar in International Studies

---

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.

**Linked B.A./M.A. Program in International Studies**

Qualified students can apply for admission to the linked B.A./M.A graduate degree program in international studies. The program allows exceptional students to count up to 12 credit hours of international studies courses toward both an undergraduate and graduate degree. Students must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree).

**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 linked 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.

**Program Requirements**

Students pursuing the linked 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**

Select one of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 308</td>
<td>3</td>
</tr>
<tr>
<td>POLS 308</td>
<td>3</td>
</tr>
<tr>
<td>HIST 201</td>
<td>3</td>
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</table>

**Foreign Language**

Select one:

<table>
<thead>
<tr>
<th>Language</th>
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<tbody>
<tr>
<td>Arabic</td>
<td>21</td>
</tr>
<tr>
<td>Chinese</td>
<td>21</td>
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<tr>
<td>French</td>
<td>21</td>
</tr>
<tr>
<td>German</td>
<td>21</td>
</tr>
<tr>
<td>Hebrew</td>
<td>21</td>
</tr>
<tr>
<td>Italian</td>
<td>21</td>
</tr>
<tr>
<td>Japanese</td>
<td>21</td>
</tr>
<tr>
<td>Russian</td>
<td>21</td>
</tr>
<tr>
<td>Spanish</td>
<td>21</td>
</tr>
</tbody>
</table>

**Core Courses in Geography, History, Political Science, and Cultural Studies**

Five of the following six courses are required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 305</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 320</td>
<td>3</td>
</tr>
<tr>
<td>HIST 415</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 416</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 448</td>
<td>3</td>
</tr>
<tr>
<td>POLS 323</td>
<td>3</td>
</tr>
<tr>
<td>POLS 324</td>
<td>3</td>
</tr>
<tr>
<td>Cultural Studies: **</td>
<td></td>
</tr>
<tr>
<td>B A I S S en ior S e m i n a r</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>FL 480W</td>
<td>3</td>
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<tr>
<td>GEOG 480W</td>
<td>3</td>
</tr>
<tr>
<td>HIST 480W</td>
<td>3</td>
</tr>
<tr>
<td>POLS 480W</td>
<td>3</td>
</tr>
<tr>
<td>Other approved course</td>
<td></td>
</tr>
</tbody>
</table>

**Bridge Courses (to be taken during Senior Year)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS 600</td>
<td>3</td>
</tr>
<tr>
<td>IS 601</td>
<td>3</td>
</tr>
</tbody>
</table>

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Old Dominion University 146
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.

2. Students fulfill the BAIS language requirement (which also fulfills MAIS requirements).

3. 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.

4. Students in the linked 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 or POLS 102S Introduction to International Politics 3
- ECON 201S Principles of Macroeconomics 3

Select one of the following:

- HIST 100H Interpreting the World Past Since 1500 3
- HIST 101H Interpreting the Asian Past 3
- HIST 102H Interpreting the European Past 3
- HIST 103H Interpreting the Latin America Past 3
- HIST 105H Interpreting the African Past 3

Not accepted for the major:

- HIST 104H Interpreting the American Past 3

5. 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.

F. Ludwig Diehn School of Music

Web Site: http://www.odu.edu/musicdept

Nancy K. Klein, Chair
Agnes Fuller-Wynne, Chief Departmental Advisor
Douglas T. Owens, Graduate Program Director

http://www.odu.edu/musicdept

Old Dominion University is a fully accredited member of the National Association of Schools of Music and offers applied music instruction and coursework leading to the following degrees:

- the 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 an emphasis in Sound Recording Technology;
- the Bachelor of Arts with a major in Music (with options in Music History, Music Theory, or Jazz);
- the Bachelor of Music in Music Education (with options in Vocal or Instrumental Music Education).

For admittance to the department, prospective students must pass a music audition and take the music theory/aural skills placement exam.

In addition to the work offered for degree students in music, the following are available to non-music majors: the 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 Choir, Madrigal Choir, Wind Ensemble, Symphony Orchestra, Jazz Orchestra, Symphonic Band, Marching Band and other ensembles; and individual instruction in piano, organ, voice, guitar, harpsichord, and the orchestral and band instruments. See the School’s ensembles page (http://www.odu.edu/musicdept/ensembles) for more information.

The F. Ludwig Diehn School of Music offers the Master of Music Education (MME) degree. 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) 3
Mathematics 3
Language and Culture ** 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 35-41

* Grade of C or better required in both courses and in ENGL 110C before declaring major
** French, German, or Italian is strongly recommended.
*** Satisfied in the major with MUSC 335T

Departmental Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Grade Requirement</th>
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</thead>
<tbody>
<tr>
<td>MUSC 221</td>
<td>Music Theory (I) *</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 222</td>
<td>Music Theory (II) *</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 223</td>
<td>Ear Training, Sight Singing and Dictation *</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 224</td>
<td>Ear Training, Sight Singing and Dictation</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 261</td>
<td>Music Literature Survey (I) **</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 262</td>
<td>Music Literature Survey (II) **</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 309</td>
<td>Principles of Conducting</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 321</td>
<td>Advanced Theory (I) *</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 322</td>
<td>Advanced Theory (II) **</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 323</td>
<td>Advanced Ear Training, Sight Singing and Dictation</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 324</td>
<td>Advanced Ear Training, Sight Singing and Dictation **</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 335T</td>
<td>Music Technology Survey (satisfies impact of technology requirement)</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 336</td>
<td>Electronic Music</td>
<td>3</td>
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<tr>
<td>MUSC 361</td>
<td>History of Music **</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 362W</td>
<td>History of Music *</td>
<td>3</td>
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<tr>
<td>MUSC 414</td>
<td>Advanced Instrumental Conducting</td>
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<td>MUSC 421</td>
<td>Counterpoint</td>
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<td>MUSC 422</td>
<td>Form and Analysis</td>
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<td>MUSC 424</td>
<td>Orchestration</td>
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<td>MUSC 466</td>
<td>Modern Music</td>
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<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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<tr>
<td>------------</td>
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</tr>
<tr>
<td>MUSA 232</td>
<td>Hour Lesson - Applied Composition</td>
<td>3</td>
</tr>
<tr>
<td>MUSA 331</td>
<td>Hour Lesson - Applied Composition</td>
<td>3</td>
</tr>
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<td>MUSA 332</td>
<td>Hour Lesson - Applied Composition</td>
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<td>MUSA 431</td>
<td>Hour Lesson - Applied Composition</td>
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<tr>
<td>MUSA 432</td>
<td>Hour Lesson - Applied Composition</td>
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</table>

Select two Music History Electives from the following: 6

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 460</td>
<td>History of Jazz</td>
<td></td>
</tr>
<tr>
<td>MUSC 491</td>
<td>Music in the Baroque Era</td>
<td></td>
</tr>
<tr>
<td>MUSC 492</td>
<td>Music in the Classical Era</td>
<td></td>
</tr>
<tr>
<td>MUSC 494</td>
<td>Music in the Romantic Era</td>
<td></td>
</tr>
</tbody>
</table>

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 Half-Hour Lesson 2
MUSA 142 Half-Hour Lesson 2
MUSA 241 Half-Hour Lesson 2
MUSA 242 Half-Hour Lesson 2

Piano Proficiency * 0
Recital Attendance Credit and Usher Credit required **

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 Bachelor of Music, Composition majors are required to attend 60 Recital Attendance events in order to be eligible for graduation. These department-approved events are posted each semester. Eight of the 60 Recital Attendance Events required for graduation must be Diehn Series concerts; it is strongly recommended that a student attend a minimum of two Diehn concerts per year to meet this goal. Students will not graduate without fulfilling this requirement. Also, students must earn Usher Credit by ushering at a total of six approved events to be eligible for graduation. Refer to the Music Student Handbook (https://www.odu.edu/musicdept/students/undergraduate/handbook)section-three) for complete information.

Composition majors are required to present a lecture-recital containing 30 minutes of original music.

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.

Requirements for Graduation

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.

Four-Year Plan - Music Composition - Bachelor of Music (http://catalog.odu.edu/undergraduate/collegeofartsletters/music/music-composition-bm-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Bachelor of Music—Performance Major

Mike Hall, Program Advisor

Lower-Division General Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 110C</td>
<td>The Nature of Science</td>
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<tr>
<td>ENGL 211C</td>
<td>Impact of Technology</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 221C</td>
<td>The Nature of Science</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 231C</td>
<td>Impact of Technology</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 221</td>
<td>Music Theory (I) *</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 222</td>
<td>Music Theory (II) *</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 223</td>
<td>Ear Training, Sight Singing and Dictation *</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 224</td>
<td>Ear Training, Sight Singing and Dictation *</td>
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</tr>
<tr>
<td>MUSC 261</td>
<td>Music Literature Survey (I) **</td>
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<tr>
<td>MUSC 262</td>
<td>Music Literature Survey (II) **</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 309</td>
<td>Principles of Conducting</td>
<td>1</td>
</tr>
</tbody>
</table>

Departmental Requirements

Old Dominion University 148
MUSA 321 Advanced Theory (I)  
MUSA 322 Advanced Theory (II)  
MUSA 323 Advanced Ear Training, Sight Singing and Dictation  
MUSA 324 Advanced Ear Training, Sight Singing and Dictation  
MUSC 335T Music Technology Survey  
MUSC 361 History of Music  
MUSC 362W History of Music  
MUSC 413 Advanced Choral Conducting  
MUSC 421 Counterpoint  
MUSC 422 Form and Analysis  
MUSC 445 Applied Music Pedagogy  
MUSC 446 Applied Music Literature  

MUSA 151-MUSA 352 Applied Lessons  
MUSA 451 Hour Lesson  
MUSA 452 Hour Lesson  
MUSC 101 Beginning Piano Class  
MUSC 102 Beginning Piano Class  
MUSA 139 Half-Hour Lesson (Piano)  
MUSA 140 Half-Hour Lesson (Piano)  
MUSA 446 Orchestration  
MUSC 422 Orchestration  

Select three Music History Elective courses from the following:  
MUSC 491 History of Jazz  
MUSC 492 Modern Music  
MUSC 493 Music in the Baroque Era  
MUSC 494 Music in the Romantic Era  
MUSC 345 Diction for Singers  
MUSC 346 Diction for Singers  
Piano Proficiency Exam  
Concert Choir  
Opera Workshop  
Small Vocal Ensemble  

Recital Attendance Credit and Usher Credit required ++  

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**  
MUSC Band or Orchestra  
Small Instrumental Ensemble *  

Total Hours 47  

**Voice Concentration**  
101F-102F Foreign Language  
MUSA 151-MUSA 352 Applied Lessons  
MUSA 451 Hour Lesson  
MUSA 452 Hour Lesson  
MUSC 101 Beginning Piano Class  
MUSC 102 Beginning Piano Class  
MUSA 139 Half-Hour Lesson (Piano)  
MUSA 140 Half-Hour Lesson (Piano)  
MUSA 239 Half-Hour Lesson (Piano)  

MUSA 240 Half-Hour Lesson (Piano)  
Select two Music History elective courses from the following:  
MUSC 491 History of Jazz  
MUSC 492 Modern Music  
MUSC 493 Music in the Baroque Era  
MUSC 494 Music in the Romantic Era  
MUSC 345 Diction for Singers  
Piano Proficiency Exam  
Concert Choir  
Small Vocal Ensemble  

Recital Attendance Credit and Usher Credit required ++  

Total Hours 52  

**Piano, Organ, Harpsichord, or Guitar Concentration**  
MUSA 151-352 Applied Lessons  
MUSA 451 Hour Lesson  
MUSA 452 Hour Lesson  
Select three Music History Elective courses from the following:  
MUSC 491 History of Jazz  
MUSC 492 Modern Music  
MUSC 493 Music in the Baroque Era  
MUSC 494 Music in the Romantic Era  
MUSC 422 Orchestration  

Recital Attendance Credit and Usher Credit required ++  

Total Hours 41-43  
* World Language other than that used to satisfy lower division General Education (French, German or Italian strongly recommended).  
+ 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.  
++ PLEASE NOTE: All Bachelor of Music, Performance majors are required to attend 60 Recital Attendance events in order to be eligible for graduation. These department-approved events are posted each semester. Eight of the 60 Recital Attendance events required for graduation must be Diehn Series concerts; it is strongly recommended that a student attend a minimum of two Diehn concerts per year to meet this goal. Students will not graduate without fulfilling this requirement. Also, students must earn Usher Credit by ushering at a total of six approved events to be eligible for graduation. Refer to the Music Student Handbook (https://www.odu.edu/musicdept/students/undergraduate/handbook/section-three) for complete information.  

**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
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 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.

Four-Year Plan - Music Performance - Bachelor of Music (http://catalog.odu.edu/undergraduate/collegeofartsletters/music/music-performance-bm-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Bachelor of Music - Emphasis in Sound Recording Technology
Louis Steven Latham, Program Advisor

Lower-Division General Education

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication *</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity (select one of the following)</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 121A Introduction to the Visual Arts</td>
<td></td>
</tr>
<tr>
<td>ARTS 122A Visual Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 270A Film Appreciation</td>
<td></td>
</tr>
<tr>
<td>or THEA 270A Film Appreciation</td>
<td></td>
</tr>
<tr>
<td>DANC 185A Dance and Its Audience</td>
<td></td>
</tr>
<tr>
<td>THEA 241A The Theatre Experience</td>
<td></td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
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<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
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<tr>
<td>Impact of Technology **</td>
<td></td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours: 38-44

** 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 Bachelor of Music, with Emphasis in Sound Recording Technology majors are required to attend 60 Recital Attendance events in order to be eligible for graduation. These department-approved events are posted each semester. Eight of the 60 Recital Attendance events required for graduation must be Diehn Series concerts; it is strongly recommended that a student attend a minimum of two Diehn concerts per year to meet this goal. Students will not graduate without fulfilling this requirement. Also, students must earn Usher Credit by ushering at a total of six approved events to be eligible for graduation. Refer to the Music Student Handbook (https://www.odu.edu/musicdept/students/undergraduate/handbook/section-three) for complete information.

Total Hours: 84

Major Courses

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>MUSC 101 Beginning Piano Class</td>
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</tr>
<tr>
<td>MUSC 102 Beginning Piano Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 221 Music Theory (I) *</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 222 Music Theory (II) *</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 223 Ear Training, Sight Singing and Dictation *</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 224 Ear Training, Sight Singing and Dictation *</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 261 Music Literature Survey (I) **</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 262 Music Literature Survey (II) **</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 309 Principles of Conducting</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 321 Advanced Theory (I) *</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 322 Advanced Theory (II) **</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 323 Advanced Ear Training, Sight Singing and Dictation *</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 324 Advanced Ear Training, Sight Singing and Dictation **</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 335T Music Technology Survey</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 336 Electronic Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 361 History of Music **</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 362W History of Music *</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 316 Popular Songwriting Techniques</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 425 Vocal Arranging</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 435 Music Production: MIDI II</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 113 Live Audio Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 115 Introduction to Pro Tools</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 116 Essentials of Pro Tools</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 215 ProTools Production</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 216 Music Production Techniques</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 333 Music Business</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 350 Music Notation</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 368 Music Industry Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Supportive Courses in Music

Applied Lessons (7 Semesters)

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSA 141 Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 142 Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 241 Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 242 Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 341 Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 342 Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 441 Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td>Large or Small Ensemble (7 Semesters)</td>
<td>7</td>
</tr>
<tr>
<td>MUSC 316 Popular Songwriting Techniques</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 425 Vocal Arranging</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 435 Music Production: MIDI II</td>
<td>3</td>
</tr>
</tbody>
</table>

Sound Recording Technology Courses

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 113 Live Audio Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 115 Introduction to Pro Tools</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 116 Essentials of Pro Tools</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 215 ProTools Production</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 216 Music Production Techniques</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 333 Music Business</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 350 Music Notation</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 368 Music Industry Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Recital Attendance Credit and Usher Credit required ***

* Students must earn a C or better in both courses and in ENGL 110C before declaring major

** Students must earn a grade of C- or better in these courses.

*** PLEASE NOTE: All Bachelor of Music, with Emphasis in Sound Recording Technology majors are required to attend 60 Recital Attendance events in order to be eligible for graduation. These department-approved events are posted each semester. Eight of the 60 Recital Attendance events required for graduation must be Diehn Series concerts; it is strongly recommended that a student attend a minimum of two Diehn concerts per year to meet this goal. Students will not graduate without fulfilling this requirement. Also, students must earn Usher Credit by ushering at a total of six approved events to be eligible for graduation. Refer to the Music Student Handbook (https://www.odu.edu/musicdept/students/undergraduate/handbook/section-three) for complete information.
- 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**

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 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, 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.

**Four-Year Plan - Sound Recording Technology Emphasis - Bachelor of Music**

(http://catalog.odu.edu/undergraduate/collegeofartsletters/music/music-soundrecording-bm-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Bachelor of Arts—Music Major**

James Kosnik, Program Advisor

**Lower-Division General Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication *</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture **</td>
<td>0-12</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following Human Creativity courses:</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 121A Introduction to the Visual Arts</td>
<td></td>
</tr>
<tr>
<td>ARTS 122A Visual Communication</td>
<td></td>
</tr>
<tr>
<td>COMM/THEA 270A Film Appreciation</td>
<td></td>
</tr>
<tr>
<td>DANC 185A Dance and Its Audience</td>
<td></td>
</tr>
<tr>
<td>THEA 241A The Theatre Experience</td>
<td></td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>Impact of Technology ***</td>
<td></td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>38-50</td>
</tr>
</tbody>
</table>

* 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 221 Music Theory (I) *</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 222 Music Theory (II) *</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 223 Ear Training, Sight Singing and Dictation *</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 224 Ear Training, Sight Singing and Dictation *</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 261 Music Literature Survey (I) **</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 262 Music Literature Survey (II) **</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 309 Principles of Conducting</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 321 Advanced Theory (I) **</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 322 Advanced Theory (II) **</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 323 Advanced Ear Training, Sight Singing and Dictation *</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 324 Advanced Ear Training, Sight Singing and Dictation **</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 335T Music Technology Survey (meets impact of technology requirement)</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 361 History of Music **</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 362W History of Music *</td>
<td>3</td>
</tr>
<tr>
<td>Ensemble ***</td>
<td>2</td>
</tr>
<tr>
<td>Applied Music (student must perform on an SPH in the final semester of applied)</td>
<td>4</td>
</tr>
<tr>
<td>Music Elective</td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>Recital Attendance Credit and Usher Credit required</td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>34</td>
</tr>
</tbody>
</table>

* 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 336 Electronic Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 337 Jazz Improvisation I</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 338 Jazz Improvisation II</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 410 Psychology of Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 413 Advanced Choral Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 414 Advanced Instrumental Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 421 Counterpoint</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 422 Form and Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 424 Orchestration</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 460 History of Jazz</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 466 Modern Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 491 Music in the Baroque Era</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 492 Music in the Classical Era</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 494 Music in the Romantic Era</td>
<td>3</td>
</tr>
<tr>
<td>Recital Attendance Credit and Usher Credit required **</td>
<td>1</td>
</tr>
</tbody>
</table>

**Music History Emphasis Area**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 460 History of Jazz</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 466 Modern Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 491 Music in the Baroque Era</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 492 Music in the Classical Era</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 494 Music in the Romantic Era</td>
<td>3</td>
</tr>
<tr>
<td>Music Elective (upper level) *</td>
<td>3</td>
</tr>
</tbody>
</table>
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).

Elective Credit

Additional elective credit will be needed to meet the minimum requirement of 120 credit hours in the Bachelor of Arts, Music major. Each student must have a minimum of 120 credit hours to graduate.

Requirements for Graduation

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) in the major course with a grade of C or better, and completion of Senior Assessment.

Four-Year Plan - Music - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/music/music-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Bachelor of Music—Music Education Major

Douglas T. Owens, Program Advisor

Lower-Division General Education

Written Communication 6
Oral Communication (satisfied in the major) 3
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 3
Human Behavior 3
Total Hours 35-41

* 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
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 335T</td>
<td>Music Technology Survey (satisfies impact of technology requirement)</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 361</td>
<td>History of Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 362W</td>
<td>History of Music *</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours:** 26

* 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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 101</td>
<td>Beginning Piano Class (I)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 102</td>
<td>Beginning Piano Class (II)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 107</td>
<td>Beginning Voice Class (I)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 301</td>
<td>Music Education: High Brass Class (Trumpet)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 302</td>
<td>Music Education: Low Brass Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 303</td>
<td>Music Education: Clarinet Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 304</td>
<td>Music Education: Woodwind Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 305</td>
<td>Music Education: Upper Strings Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 306</td>
<td>Music Education: Lower Strings Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 307</td>
<td>Music Education: Percussion Class I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 310</td>
<td>Music Education: Percussion Class II</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 414</td>
<td>Advanced Instrumental Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 426</td>
<td>Marching Band Techniques and Arranging (woodwind, brass and percussion. String students should take MUSC 424 Orchestration)</td>
<td>2</td>
</tr>
</tbody>
</table>

**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**

**Total Hours:** 36

* The large instrumental ensemble requirement will be met through participation in wind ensemble, symphonic band, and orchestra as assigned by the ensemble directors. In addition, woodwind, brass and percussion instrumentalists are required to complete one semester of Marching Band, MUSC 390.

** 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)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 345</td>
<td>Diction for Singers (I)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 346</td>
<td>Diction for Singers (II)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 409</td>
<td>Music Education: Instrumental Techniques</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 413</td>
<td>Advanced Choral Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 425</td>
<td>Vocal Arranging (if not offered, MUSC 424 or MUSC 426 can be substituted)</td>
<td>2</td>
</tr>
</tbody>
</table>

**Applied Music Requirement - MUSA 141-441 ** | 14

**Ensemble**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 345</td>
<td>Diction for Singers (I)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 346</td>
<td>Diction for Singers (II)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 409</td>
<td>Music Education: Instrumental Techniques</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 413</td>
<td>Advanced Choral Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 425</td>
<td>Vocal Arranging (if not offered, MUSC 424 or MUSC 426 can be substituted)</td>
<td>2</td>
</tr>
</tbody>
</table>

**Applied Music Requirement - MUSA 141-441 ** | 14

**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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 101</td>
<td>Beginning Piano Class (I)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 102</td>
<td>Beginning Piano Class (II)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 130</td>
<td>Functional Piano Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

Upon completion of MUSC 130, students will take the Piano Barrier Exam.

**MUSA 141** Hour Lesson | 2

The Music Education Piano Jury is required and occurs after MUSA 141. If the student does not pass the Piano Jury, then MUSA 141 must be retaken.

**Voice Proficiency exam required**

**Recital Attendance Credit and Usher Credit required ** | 1

**Total Hours:** 5

**Keyboard or Guitar Emphasis**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 107</td>
<td>Beginning Voice Class (I)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 139</td>
<td>Half-Hour Lesson (Voice)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 140</td>
<td>Half-Hour Lesson (Voice)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 239</td>
<td>Half-Hour Lesson (Voice)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 240</td>
<td>Half-Hour Lesson (Voice)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Piano and Voice Proficiency exam required**

**Recital Attendance Credit and Usher Credit required ** | 1

**Total Hours:** 6

* **PLEASE NOTE:** All Bachelor of Music, Music Education majors are required to attend 50 Recital Attendance events in order to be eligible for graduation. These department-approved events are posted each semester. Eight of the 50 Recital Attendance events required for graduation must be Diehn Series concerts; It is strongly recommended that a student attend a minimum of two Diehn concerts per year to meet this goal. Students will not graduate without fulfilling this requirement.

Also, students must earn Usher Credit by ushering at a total of six approved events to be eligible for graduation. Refer to the Music Student Handbook (https://www.odu.edu/musicdept/students/undergraduate/handbook/section-three) for complete information.

**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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, https://www.odu.edu/oce and review the Professional 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 Clinical Experiences.

**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 Subject Assessment, music content knowledge examination (formerly Praxis II), test code 5113, 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.

**Background Clearance Requirement**

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement (MUSC 300, MUSC 402, MUSC 404, and MUSC 408). Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

**Virginia Board of Education Prescribed Assessments for Licensure**

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.
- Praxis Subject Assessment, music content knowledge (formerly Praxis II) (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 Office of Clinical Experiences website, https://www.odu.edu/oce.

**Graduation**

Requirements for graduation include 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; 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 126-132 credit hours, which must include both a minimum of 32-33 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 Office of Clinical Experiences website at https://www.odu.edu/oce.

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:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 300</td>
<td>Foundations of Music Education</td>
<td>3</td>
</tr>
<tr>
<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>26</td>
</tr>
</tbody>
</table>

**Vocal, Keyboard, or Guitar**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 401</td>
<td>Music Education: Elementary Vocal and General Methods</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 402</td>
<td>Music Education: Practicum (Elementary Vocal and General)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 403</td>
<td>Music Education: Secondary Vocal Methods</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 404</td>
<td>Music Education: Practicum (Secondary Vocal)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>6</td>
</tr>
</tbody>
</table>

**OR Instrumental**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 401</td>
<td>Music Education: Elementary Vocal and General Methods</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 402</td>
<td>Music Education: Practicum (Elementary Vocal and General)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 407</td>
<td>Music Education: Secondary Instrumental Methods</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 408</td>
<td>Music Education: Practicum (Secondary Instrumental)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>6</td>
</tr>
</tbody>
</table>

* 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-Division 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:
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSA 139</td>
<td>Half-Hour Lesson (Piano)</td>
<td>1</td>
</tr>
<tr>
<td>MUSA 140</td>
<td>Half-Hour Lesson (Piano)</td>
<td>1</td>
</tr>
<tr>
<td>MUSA 239</td>
<td>Half-Hour Lesson (Piano)</td>
<td>1</td>
</tr>
<tr>
<td>MUSA 240</td>
<td>Half-Hour Lesson (Piano)</td>
<td>1</td>
</tr>
<tr>
<td>MUSA 239</td>
<td>Half-Hour Lesson (Voice)</td>
<td>1</td>
</tr>
<tr>
<td>MUSA 240</td>
<td>Half-Hour Lesson (Voice)</td>
<td>1</td>
</tr>
<tr>
<td>MUSA 240</td>
<td>Half-Hour Lesson (Voice)</td>
<td>1</td>
</tr>
<tr>
<td>MUSA 240</td>
<td>Half-Hour Lesson (Voice)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 381+</td>
<td>Concert Choir</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 403</td>
<td>Music Education: Secondary Vocal Methods</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 404</td>
<td>Music Education: Practicum (Secondary Vocal)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 413</td>
<td>Advanced Choral Conducting</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Hours: 15

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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 301</td>
<td>Music Education: High Brass Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 302</td>
<td>Music Education: Low Brass Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 303</td>
<td>Music Education: Clarinet Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 304</td>
<td>Music Education: Woodwind Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 305</td>
<td>Music Education: Upper Strings Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 306</td>
<td>Music Education: Lower Strings Class</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 307</td>
<td>Music Education: Percussion Class I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 407</td>
<td>Music Education: Secondary Instrumental Methods</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 408</td>
<td>Music Education: Practicum (Secondary Instrumental)</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 414</td>
<td>Advanced Instrumental Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 380</td>
<td>Symphony Band</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 382+</td>
<td>Wind Ensemble</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUSC 383+</td>
<td>Symphony Orchestra</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 13

Four-Year Plan - Music Education Major - Bachelor of Music ([http://catalog.odu.edu/undergraduate/collegeofartsletters/music/music-musiced-bm-fouryearplan](http://catalog.odu.edu/undergraduate/collegeofartsletters/music/music-musiced-bm-fouryearplan))

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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 fail applied music for that semester. An audition is required to re-enter applied music after an absence of two consecutive semesters or more.

Jury Examinations

Applied music students taking hour lessons at the MUSA 142 level or higher must take a jury examination each semester. Failure to perform a required jury will result in a final applied grade of F. The jury grade counts as 50% of the final applied grade. The remaining 50% is based on progress in lessons and is determined by the student's teacher. Students auditing Applied Music take juries in the first semester in which they are enrolled for credit. Audit status is normally allowed for one semester only and is granted on the auditioning committee's recommendation that the student will likely be ready for credit study after one semester of audit study. A student with audit status will audition for credit study during the jury examination period at the close of the audit semester.

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 264/A or MUSC 261, and MUSC 262. Requirements for the minor are

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 361</td>
<td>History of Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 362W</td>
<td>History of Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 460</td>
<td>History of Jazz</td>
<td>3</td>
</tr>
<tr>
<td>MUSA 339</td>
<td>History of Music</td>
<td>3</td>
</tr>
</tbody>
</table>

400-level music history

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 335T</td>
<td>Music Technology Survey</td>
<td>3</td>
</tr>
<tr>
<td>MUSA 339</td>
<td>Hour Lesson - Applied Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 340</td>
<td>Hour Lesson - Applied Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 439</td>
<td>Hour Lesson - Applied Composition</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 440</td>
<td>Hour Lesson - Applied Composition</td>
<td>2</td>
</tr>
</tbody>
</table>

One additional hour of upper-division music courses

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSA 341</td>
<td>Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 342</td>
<td>Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 441</td>
<td>Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td>MUSA 442</td>
<td>Hour Lesson</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Four additional hours of upper-division music courses</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Vocal Performance minors must take the following:</td>
<td></td>
</tr>
<tr>
<td>MUSC 345</td>
<td>Diction for Singers</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 346</td>
<td>Diction for Singers</td>
<td>1</td>
</tr>
</tbody>
</table>

4. All music minors are required to attend 24 Recital Attendance events in order to be eligible for graduation. These department-approved events are posted each semester. Four of the 24 Recital Attendance events required for graduation must be Diehn Series concerts; it is strongly recommended that a student attend at least one Diehn concert a year to meet this goal. Students may not graduate without fulfilling this requirement. Also, Music minors must earn Usher Credit by ushering at a total of three approved events to be eligible for graduation. Refer to the Music Student Handbook (https://www.odu.edu/musicdept/students/undergraduate/handbook/section-three) for complete information.

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 F. Ludwig Diehn School 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 F. Ludwig Diehn School 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 (http://www.odu.edu/musicdept/students/undergraduate/handbook) for further information regarding juries, Blue Card recital attendance policy, Student Performance Hour, General Student Recital performance requirements, and other information.

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. 39) for more information.

Community Music Division

The Community Music Division in the College of Arts and Letters offers the finest level of private music instruction, classes, and ensembles to people of all ages and abilities. Staff members hold degrees in music and specialize in the instruments that they teach. Most are active performers or teachers in the finest level of private music instruction, classes, and ensembles to people of all ages and abilities.
**General Concentration**

**History of Philosophy**
- PHIL 332 Medieval Philosophy (or another department-approved PHIL course on 18th century or earlier philosophy)

**Ethics and Values - Select one:**
- PHIL 313 Philosophy of Religion
- PHIL 324 Philosophy of Art
- PHIL 410 Social and Political Philosophy
- PHIL 411 Postmodernism and Political Philosophy
- PHIL 412 Philosophy of Law
- PHIL 423 Philosophy of Work
- PHIL 441 Foundations of Ethics
- PHIL 442E Studies in Applied Ethics

**Philosophy Electives**
- Three 300/400-level PHIL electives

**Total Hours**
15

**Religious Studies Concentration**

The religious studies concentration is designed for students looking to understand the role of religion in human culture and to expand their cultural competency.

**History of Philosophy**
- PHIL 332 Medieval Philosophy (or another department-approved PHIL course on 18th century or earlier philosophy)

**Religious Studies**
- PHIL 313 Philosophy of Religion

**Religious Traditions - Select three, at least one from each group:**
- Western courses
  - REL 311 Hebrew Bible/Old Testament
  - REL 312 New Testament
  - REL 333 Historical Jesus
  - REL 350 Judaism
  - REL 351 Christianity
  - REL 352 Islam
  - REL 400 Sacred Texts of Islam
- Eastern Courses
  - PHIL 353 Asian Religions
  - PHIL 480 Hinduism
  - PHIL 481 Buddhism
  - PHIL 482 Chinese Religion and Philosophy
  - PHIL 485 Japanese Religion and Philosophy

**Total Hours**
15

**Political and Legal Studies Concentration**

The political and legal studies concentration is aimed at students interested in social and political philosophy, particularly those planning to attend law school.

**Political and Legal Core - Select two:**
- 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:**
- 1-2 courses from Political and Legal Studies Core
- PHIL 303E Business Ethics
- PHIL 344E Environmental Ethics
- PHIL 345E Bioethics
- PHIL 355E Cybersecurity Ethics
- PHIL 442E Studies in Applied Ethics

**Philosophy Elective**
- One 300/400-level PHIL course

**Total Hours**
15

**Electives**

Elective courses will be needed to meet the minimum 120 credit hours required for graduation.

**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**
- Minimum grade point average of 2.00 overall and in the major
- 120 credit hours, of which 30 hours overall and 12 hours of upper-level courses in the major must be from Old Dominion University.
- Completion of ENGL 110C and ENGL 211C, ENGL 221C, or ENGL 231C with a grade of C or better
- Grade of C or better in one writing intensive (W) course in the major
- Completion of Senior Assessment

**Four-Year Plan - Philosophy - BA**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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 may count
any two of the following political science courses toward their philosophy
major:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 310</td>
<td>Political Theory</td>
</tr>
<tr>
<td>POLS 312</td>
<td>American Political Thought</td>
</tr>
<tr>
<td>POLS 403</td>
<td>First Amendment Freedoms</td>
</tr>
<tr>
<td>POLS 408</td>
<td>American Constitutional Law and Politics I</td>
</tr>
<tr>
<td>POLS 409</td>
<td>American Constitutional Law and Politics II</td>
</tr>
<tr>
<td>POLS 419</td>
<td>Jurisprudence</td>
</tr>
</tbody>
</table>

These courses will count as Political-Legal electives; students will still be
required to take 6 hours of Political-Legal core courses. Students doing the
linked B.A./M.A. in Philosophy and Humanities can count only one 500-level
political science course as a "bridge" course. Certain political science "topics"
courses may be counted as philosophy electives with prior approval from
the Philosophy and Religious Studies Department. Political Science will also
double count select philosophy courses for double majors; for details, see the
Political Science and Geography section of this catalog (http://www.odu.edu/
pols-geog).

Students interested in double majoring in philosophy and a subject other than
political science should consult the chief departmental advisor; there may be
some opportunity for double counting at least one class.

**Linked B.A. in Philosophy and M.A. in Humanities**

The linked B.A. in philosophy and M.A. in Humanities makes it possible
for exceptional philosophy majors to count up to 12 hours of graduate
courses toward both an undergraduate and graduate degree. Students
must earn a minimum of 150 credit hours (120 for the undergraduate
degree and 30 for the graduate degree). For more information, consult
the Humanities section of this catalog (http://catalog.odu.edu/undergraduate/
collegeofartsletters/humanities).

**Minors in Philosophy and Religious Studies**

Students may choose one of the following four minor concentrations:

**General**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 441</td>
<td>Foundations of Ethics</td>
</tr>
</tbody>
</table>

**Applied Ethics**

- PHIL 303E Business Ethics
- PHIL 344E Environmental Ethics
- PHIL 345E Bioethics
- PHIL 355E Cybersecurity Ethics
- PHIL 402 Gender and Philosophy
- PHIL 410 Social and Political Philosophy
- PHIL 442E Studies in Applied Ethics

**Religious Studies**

- REL 311 Hebrew Bible/Old Testament
- REL 312 New Testament
- REL 333 Historical Jesus
- REL 350 Judaism
- REL 351 Christianity
- REL 352 Islam
- REL 395 Topics in Religious Studies
- REL 396 Topics in Religious Studies
- REL 400 Sacred Texts of Islam
- REL 495 Topics in Religious Studies
- REL 496 Topics in Religious Studies

**Political and Legal Studies**

Select at least two from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 304</td>
<td>Marx and the Marxists</td>
</tr>
<tr>
<td>PHIL 340</td>
<td>Logic</td>
</tr>
<tr>
<td>PHIL 410</td>
<td>Social and Political Philosophy</td>
</tr>
<tr>
<td>PHIL 411</td>
<td>Postmodernism and Political Philosophy</td>
</tr>
<tr>
<td>PHIL 412</td>
<td>Philosophy of Law</td>
</tr>
<tr>
<td>PHIL 441</td>
<td>Foundations of Ethics</td>
</tr>
</tbody>
</table>

Select from the following to complete a total of 12 credits:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 303E</td>
<td>Business Ethics</td>
</tr>
<tr>
<td>PHIL 344E</td>
<td>Environmental Ethics</td>
</tr>
<tr>
<td>PHIL 345E</td>
<td>Bioethics</td>
</tr>
<tr>
<td>PHIL 355E</td>
<td>Cybersecurity Ethics</td>
</tr>
<tr>
<td>PHIL 402</td>
<td>Gender and Philosophy</td>
</tr>
<tr>
<td>PHIL 442E</td>
<td>Studies in Applied Ethics</td>
</tr>
</tbody>
</table>

For completion of a minor, a student must have a minimum cumulative grade
point average of 2.00 in all upper-level courses required for the minor
and complete a minimum of six hours in the minor 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 230E, or PHIL 250E) may not receive credit by examination
for another of them.

**Political Science and Geography**

**Web Site:** http://www.odu.edu/pols-geog

Jonathan Leib, 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' oral 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

Michael Clemons, Chief Departmental Advisor

Lower-Division General Education

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication *</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics **</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture ***</td>
<td>0-12</td>
</tr>
<tr>
<td>Information Literacy and Research ****</td>
<td></td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>Impact of Technology</td>
<td>3</td>
</tr>
<tr>
<td>Human Behavior +</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201S Principles of Macroeconomics</td>
<td>3</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 100S Introduction to International Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 101S Introduction to American Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 102S Introduction to Comparative Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 308 Research Design (C- or better) *</td>
<td>3</td>
</tr>
<tr>
<td>POLS 418 Quantitative Methods (BS only)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202S Principles of Microeconomics or GEOG 100S Cultural Geography</td>
<td>3</td>
</tr>
</tbody>
</table>

* 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 300-400 electives</td>
<td>9</td>
</tr>
<tr>
<td>POLS 300-400 level writing intensive (W) course *</td>
<td>3</td>
</tr>
<tr>
<td>POLS 300-400 (BA only)</td>
<td>3</td>
</tr>
<tr>
<td>POLS 400-level electives</td>
<td>9</td>
</tr>
</tbody>
</table>

* 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).

Requirements for Graduation

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.

Four-Year Plan - Political Science - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/politicalscienceandgeography/politicalscience-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Four-Year Plan - Political Science - BS (http://catalog.odu.edu/undergraduate/collegeofartsletters/politicalscienceandgeography/politicalscience-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 304</td>
<td>Marx and the Marxists</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 410</td>
<td>Social and Political Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 411</td>
<td>Postmodernism and Political Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 412</td>
<td>Philosophy of Law</td>
<td>3</td>
</tr>
</tbody>
</table>

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.

**Major Requirements**

**Required Courses** 12-18

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 100S</td>
<td>Cultural Geography</td>
</tr>
<tr>
<td>GEOG 101S</td>
<td>Environmental Geography</td>
</tr>
<tr>
<td>GEOG 300</td>
<td>Maps and Geographic Information</td>
</tr>
<tr>
<td>GEOG 308</td>
<td>Research Design *</td>
</tr>
<tr>
<td>GEOG 418</td>
<td>Quantitative Methods **</td>
</tr>
</tbody>
</table>

Select one of the following: ***

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 400W</td>
<td>Seminar in Geography</td>
</tr>
<tr>
<td>GEOG 422W</td>
<td>Coastal Geography</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 454W</td>
<td>Latin America</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 480W</td>
<td>Senior Seminar in International Studies</td>
</tr>
</tbody>
</table>

* 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEAS 306</td>
<td>Oceanography</td>
</tr>
<tr>
<td>OEAS 310</td>
<td>Global Earth Systems</td>
</tr>
<tr>
<td>OEAS 344W</td>
<td>Geomorphology</td>
</tr>
<tr>
<td>OEAS 412</td>
<td>Global Environmental Change</td>
</tr>
<tr>
<td>OEAS 448</td>
<td>Population Ecology</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 300-400 electives (BA only)</td>
<td>12</td>
</tr>
<tr>
<td>GEOG 300-400 electives (BS only)</td>
<td>9</td>
</tr>
<tr>
<td>GEOG 400-level electives</td>
<td>9</td>
</tr>
</tbody>
</table>

**Urban Concentration**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 310</td>
<td>Geography of the City</td>
</tr>
<tr>
<td>GEOG 410</td>
<td>Seminar in Urban Geography</td>
</tr>
<tr>
<td>GEOG 300-400 electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Select two of the following: 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 306T</td>
<td>Hazards: Natural and Technological</td>
</tr>
<tr>
<td>GEOG 321</td>
<td>World Economic Geography</td>
</tr>
<tr>
<td>GEOG 368</td>
<td>Internship in Geography</td>
</tr>
<tr>
<td>GEOG 402</td>
<td>Geographic Information Systems</td>
</tr>
<tr>
<td>GEOG 411</td>
<td>Urban and Regional Planning</td>
</tr>
<tr>
<td>GEOG 412</td>
<td>Cities of the World</td>
</tr>
</tbody>
</table>

Total Hours 18

**Environment and Resources Concentration**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 305</td>
<td>World Resources</td>
</tr>
<tr>
<td>GEOG 405</td>
<td>Seminar in International Resource Management</td>
</tr>
</tbody>
</table>

Select two of the following: 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 306T</td>
<td>Hazards: Natural and Technological</td>
</tr>
<tr>
<td>GEOG 321</td>
<td>World Economic Geography</td>
</tr>
<tr>
<td>GEOG 368</td>
<td>Internship in Geography</td>
</tr>
<tr>
<td>GEOG 422W</td>
<td>Coastal Geography</td>
</tr>
<tr>
<td>GEOG 451</td>
<td>Europe</td>
</tr>
<tr>
<td>GEOG 452</td>
<td>Africa</td>
</tr>
<tr>
<td>GEOG 453</td>
<td>Asia</td>
</tr>
<tr>
<td>GEOG 454W</td>
<td>Latin America</td>
</tr>
<tr>
<td>GEOG 455</td>
<td>The Middle East</td>
</tr>
</tbody>
</table>
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.

Linked B.A./B.S. in Geography and M.A. in Humanities

The linked B.A./B.S. program in geography and the M.A. in humanities makes it possible for exceptional students to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree. Students must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Please refer to the Humanities section of this Catalog for additional information on the linked program.

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 301W</td>
<td>Introduction to Public Law</td>
</tr>
<tr>
<td>POLS 306</td>
<td>Judicial Process and Behavior</td>
</tr>
<tr>
<td>POLS 307</td>
<td>Constitutional Criminal Procedure</td>
</tr>
<tr>
<td>POLS 403</td>
<td>First Amendment Freedoms</td>
</tr>
<tr>
<td>POLS 408</td>
<td>American Constitutional Law and Politics I</td>
</tr>
<tr>
<td>POLS 409</td>
<td>American Constitutional Law and Politics II</td>
</tr>
<tr>
<td>POLS 419</td>
<td>Jurisprudence</td>
</tr>
<tr>
<td>POLS 421</td>
<td>International Law</td>
</tr>
<tr>
<td>Public law topics courses such as:</td>
<td></td>
</tr>
<tr>
<td>POLS 495/496</td>
<td>Topics in Political Science</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 305</td>
<td>World Resources</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 405</td>
<td>Seminar in International Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 306T</td>
<td>Hazards: Natural and Technological</td>
<td></td>
</tr>
<tr>
<td>GEOG 420</td>
<td>Marine Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 422W</td>
<td>Coastal Geography</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 300</td>
<td>Maps and Geographic Information</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 402</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 404</td>
<td>Digital Techniques for Remote Sensing</td>
<td>3</td>
</tr>
</tbody>
</table>

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 show competence in selected courses through examination.

Students must complete the following courses:

**Core Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 300</td>
<td>Maps and Geographic Information</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 402</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 404</td>
<td>Digital Techniques for Remote Sensing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Developmental Courses**

Select three of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 330</td>
<td>Field Methods (Prior Approval Required)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 368</td>
<td>Internship in Geography (Prior Approval Required)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 408</td>
<td>Cartography</td>
<td></td>
</tr>
<tr>
<td>GEOG 419</td>
<td>Spatial Analysis of Coastal Environments</td>
<td></td>
</tr>
<tr>
<td>GEOG 425</td>
<td>Internet Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>GEOG 432</td>
<td>Advanced GIS</td>
<td></td>
</tr>
<tr>
<td>GEOG 490</td>
<td>Applied Cartography/GIS</td>
<td></td>
</tr>
<tr>
<td>GEOG 495</td>
<td>Topics in Geography (Prior Approval Required)</td>
<td></td>
</tr>
<tr>
<td>GEOG 497</td>
<td>Independent Research in Geography (Prior Approval Required)</td>
<td></td>
</tr>
</tbody>
</table>

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. Awarded 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**

**Core Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 404</td>
<td>Digital Techniques for Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 462</td>
<td>Advanced Spatial Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

**Interpretive Analysis Courses**

Select two of the following: 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 404</td>
<td>Conservation Biology</td>
<td></td>
</tr>
<tr>
<td>GEOG 420</td>
<td>Marine Geography</td>
<td></td>
</tr>
<tr>
<td>GEOG 422W</td>
<td>Coastal Geography</td>
<td></td>
</tr>
<tr>
<td>GEOG 490</td>
<td>Applied Cartography/GIS</td>
<td></td>
</tr>
<tr>
<td>GEOG 495</td>
<td>Topics in Geography</td>
<td></td>
</tr>
<tr>
<td>OEAS 306</td>
<td>Oceanography</td>
<td></td>
</tr>
<tr>
<td>OEAS 344W</td>
<td>Geomorphology</td>
<td></td>
</tr>
<tr>
<td>OEAS 495</td>
<td>Special Topics</td>
<td></td>
</tr>
</tbody>
</table>

**Capstone Seminar**

Select one of the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 419</td>
<td>Spatial Analysis of Coastal Environments</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 419</td>
<td>Spatial Analysis of Coastal Environments</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours 15

* Advanced approval required

**Sociology and Criminal Justice**

Mona J.E. Danner, Chair
Jessica Huffman, 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>STAT 130M</td>
<td>Elementary Statistics (required)</td>
<td></td>
</tr>
<tr>
<td>Language and Culture</td>
<td></td>
<td>0-12</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Old Dominion University 162
Philosophy and Ethics  
The Nature of Science  
Impact of Technology  
Human Behavior 

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

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 ***

SOC 300-400 Level Electives

Social Welfare Concentration

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

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 and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

Four-Year Plan - Sociology

- BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/sociologyandcriminaljustice/sociology-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Four-Year Plan - Sociology

- BS (http://catalog.odu.edu/undergraduate/collegeofartsletters/sociologyandcriminaljustice/sociology-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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

Written Communication * 6
Oral Communication 3
Mathematics 3
STAT 130M  Elementary Statistics (required) 0-12
Language and Culture ** 3
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).

Foundation Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJS 215S</td>
<td>Introduction to Criminology</td>
</tr>
<tr>
<td>CRJS 222</td>
<td>The Criminal Justice System</td>
</tr>
<tr>
<td>CRJS 262</td>
<td>Law and the Criminal Justice System</td>
</tr>
<tr>
<td>SOC 337</td>
<td>Introduction to Social Research</td>
</tr>
<tr>
<td>CRJS 426W</td>
<td>Criminological Theory *</td>
</tr>
<tr>
<td>CRJS 436</td>
<td>Capstone Research Project</td>
</tr>
</tbody>
</table>

Stratification Course

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 320</td>
<td>Social Inequality</td>
</tr>
<tr>
<td>SOC 323</td>
<td>Sociology of Minority Families</td>
</tr>
<tr>
<td>SOC 340</td>
<td>Sociology of Women</td>
</tr>
<tr>
<td>SOC 402</td>
<td>Sociology of Child Welfare</td>
</tr>
<tr>
<td>SOC 426</td>
<td>The Sociology of Minority Groups</td>
</tr>
</tbody>
</table>

Upper-Level Law Component

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJS 320</td>
<td>Law and Social Control</td>
</tr>
<tr>
<td>CRJS 406</td>
<td>Cyber Law</td>
</tr>
<tr>
<td>CRJS 462</td>
<td>Substantive Criminal Law</td>
</tr>
</tbody>
</table>

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

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.

Four-Year Plan - Criminal Justice - BA (http://catalog.odu.edu/
undergraduate/collegeofartsletters/sociologyandcriminaljustice/criminaljustice-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four
years. Please consult information in this Catalog, Degree Works, and your
academic advisor for more specific information on course requirements for
this degree.

Four-Year Plan - Criminal Justice - BS (http://catalog.odu.edu/
undergraduate/collegeofartsletters/sociologyandcriminaljustice/criminaljustice-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four
years. Please consult information in this Catalog, Degree Works, and your
academic advisor for more specific information on course requirements for
this degree.

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

Total Hours 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

Total Hours 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

Total Hours 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

Jessica Huffman, 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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 427</td>
<td>Children's Communication Theory and Research</td>
</tr>
<tr>
<td>CRJS/SOC 403</td>
<td>Violence in the World of Children</td>
</tr>
<tr>
<td>CRJS/SOC 408</td>
<td>Children's Rights and the Law</td>
</tr>
<tr>
<td>HMSV 448</td>
<td>Interventions and Advocacy with Children</td>
</tr>
<tr>
<td>PSYC 351</td>
<td>Child Psychology</td>
</tr>
<tr>
<td>SOC 402</td>
<td>Sociology of Child Welfare</td>
</tr>
<tr>
<td>TLED 476</td>
<td>Practical Applications in the World of Children</td>
</tr>
</tbody>
</table>

Total Hours 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.

Four-Year Plan - Criminal Justice and Sociology Double

Major - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/sociologyandcriminaljustice/crjsandsoc-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Four-Year Plan - Criminal Justice and Sociology Double

Major - BS (http://catalog.odu.edu/undergraduate/collegeofartsletters/sociologyandcriminaljustice/crjsandsoc-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Advanced Placement

Students interested in credit by examination should consult with the department chair.

Certificate in Diversity Studies

Brian Payne, Coordinator

This interdisciplinary program offers a focus on diversity and addresses relationships between majority and minority groups throughout multiple societies around the globe. Class, social structures, cultural differences and related topics will be explored, along with ways to promote understanding and acceptance among those who differ in race, religion, culture, ethnicity, or other characteristics. Humanities, public administration, psychology and other courses are available to students who obtain the certificate. Graduates will gain a heightened understanding of the diversity among various people from differing countries, cultures, religions, genders and/or ethnicities, thus enhancing their approach to those who differ in various aspects of humanity. This program will serve such completers in multiple work settings, regardless of career selection.

Curriculum Requirements

Students will be required to take three courses that cover areas of diversity from among the following lists. The required course, SOC 320 Social Inequality, introduces students to differences in stratification and social class both in the U.S. and throughout the world. Other classes may be selected based on student interest in the focus areas. An overall grade point average of 2.0 or above in all courses specified as a requirement for the certificate is required for the award of the certificate.

Required:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 320</td>
<td>Social Inequality</td>
</tr>
<tr>
<td>AAST 410</td>
<td>Africana Intellectual Thought and Economic Development</td>
</tr>
<tr>
<td>AAST 420W</td>
<td>African American Political and Social Thought</td>
</tr>
<tr>
<td>ANTR 300</td>
<td>Human America Abroad on Global Health</td>
</tr>
<tr>
<td>COMM 400W</td>
<td>Intercultural Communication</td>
</tr>
<tr>
<td>CRJS 450</td>
<td>Blacks, Crime and Justice</td>
</tr>
<tr>
<td>CRJS 452</td>
<td>Diversity in Criminal Justice Organizations</td>
</tr>
<tr>
<td>ENGL 371W</td>
<td>Communication Across Cultures</td>
</tr>
<tr>
<td>HLSC 405</td>
<td>Interprofessional Study Abroad</td>
</tr>
<tr>
<td>GEOG 325</td>
<td>Ethnic Minorities</td>
</tr>
<tr>
<td>HMSV 346</td>
<td>Diversity Issues in Human Services</td>
</tr>
<tr>
<td>NURS 458</td>
<td>Studies in Professional Nursing</td>
</tr>
<tr>
<td>PAS 409</td>
<td>Leadership and Cultural Competence</td>
</tr>
<tr>
<td>PHIL 481</td>
<td>Buddhism</td>
</tr>
<tr>
<td>or PHIL 482</td>
<td>Chinese Religion and Philosophy</td>
</tr>
<tr>
<td>or REL 352</td>
<td>Islam</td>
</tr>
<tr>
<td>POLS 309</td>
<td>Race, Culture and Public Policy</td>
</tr>
<tr>
<td>PSYC 420</td>
<td>Cross-Cultural Psychology</td>
</tr>
<tr>
<td>SOC 323</td>
<td>Sociology of Minority Families</td>
</tr>
<tr>
<td>SOC 426</td>
<td>The Sociology of Minority Groups</td>
</tr>
<tr>
<td>WCS 312W</td>
<td>Communicative Competence: Writing and Reading</td>
</tr>
<tr>
<td>WMST 302W</td>
<td>Dimensions of Diversity: Intersectionality Among Women</td>
</tr>
<tr>
<td>WMST 303</td>
<td>Queer Studies</td>
</tr>
<tr>
<td>WMST 390T</td>
<td>Women and Technology Worldwide</td>
</tr>
</tbody>
</table>

Total Hours 9

Women's Studies

Jennifer Fish, Chair
Women’s Studies is a multi- and interdisciplinary field of study that examines gender in historical and contemporary contexts with an emphasis on women’s lives and perspectives. The department values the complex intersections of gender, race, class, sexuality, ability, nation, and other identities.

Both the Bachelor of Arts and Bachelor of Science degrees are offered through this department. Students in any discipline can also earn a graduate certificate in Women’s Studies. These degrees enhance 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 also provide a strong foundation for students interested in pursuing graduate work.

**Bachelor of Arts or Bachelor of Science—Women's Studies Major**

**Lower-Division General Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication *</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture **</td>
<td>0-12</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>Impact of Technology ***</td>
<td></td>
</tr>
<tr>
<td>Human Behavior ****</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours** 38-50

* Grade of C or better required in both ENGL 110C (http://catalog.odu.edu/search/?P=ENGL%20110C) and the second written communication course before declaring a 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 - Major Requirements**

<table>
<thead>
<tr>
<th>WMST 201S</th>
<th>Introduction to Women's Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 301</td>
<td>Feminist Foundations</td>
</tr>
<tr>
<td>WMST 302W</td>
<td>Dimensions of Diversity: Intersectionality Among Women</td>
</tr>
<tr>
<td>WMST 390T</td>
<td>Women and Technology Worldwide</td>
</tr>
<tr>
<td>WMST 401W</td>
<td>Women: A Global Perspective</td>
</tr>
<tr>
<td>WMST 460W</td>
<td>Feminist Theory</td>
</tr>
<tr>
<td>ENGL 463W</td>
<td>Women Writers</td>
</tr>
<tr>
<td>or ENGL 477</td>
<td>Language, Gender and Power</td>
</tr>
<tr>
<td>HIST 363</td>
<td>Women in U.S. History</td>
</tr>
</tbody>
</table>

Select four from the following: 12

<table>
<thead>
<tr>
<th>WMST 303</th>
<th>Queer Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 304</td>
<td>Chick Flicks</td>
</tr>
<tr>
<td>WMST 306</td>
<td>Women, the Environment, and Climate Change</td>
</tr>
<tr>
<td>WMST 368</td>
<td>Internship</td>
</tr>
<tr>
<td>WMST 395</td>
<td>Topics in Women's Studies</td>
</tr>
<tr>
<td>WMST 396</td>
<td>Topics in Women's Studies</td>
</tr>
</tbody>
</table>

**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**

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; completion of a writing intensive (W) course in the major with a grade of C or better; and completion of Senior Assessment.
Women and Technology Worldwide

For instance, a student majoring in both Sociology and Women’s Studies may count up to three Women’s Studies approved courses taken for their other major toward their Women’s Studies major as well. 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 approved courses taken for exceptional Women’s Studies majors to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree. Students must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). For more information consult the Humanities section of this Catalog.

World Languages and Cultures

Web Site: http://www.odu.edu/languages

Martha Daas, Chair
Peter Schulman, Chief Departmental Advisor for French
Frederick Lubich, Chief Departmental Advisor for German
Andrew Gordus, Chief Departmental Advisor for Spanish
Lee Slater, Chief Departmental Advisor for World Cultural Studies
Angelica Huizar, Director of Latin American Studies
Betty Rose Facer, Director, Language Learning Center

Four-Year Plan - Women's Studies Major -BA (http://catalog.odu.edu/undergraduate/collegeofartslatters/womensstudies/womensstudies-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Four-Year Plan - Woman's Studies Major - BS (http://catalog.odu.edu/undergraduate/collegeofartslatters/womensstudies/womensstudies-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Women's Studies as a Second Major

Students interested in Women's Studies but who already have a major may be able to 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 approved 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 count three courses (such as SOC 340 (http://catalog.odu.edu/search/?P=SOC%20340), SOC 343 (http://catalog.odu.edu/search/?P=SOC%20343), and SOC 427 (http://catalog.odu.edu/search/?P=SOC%20427)) taken toward their sociology requirements as three electives for their major in Women's Studies.

Minor in Women's Studies

WMST 201S is a prerequisite for the minor and is not included in the grade point average for the minor. Required courses are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMST 301</td>
<td>Feminist Foundations</td>
<td>3</td>
</tr>
<tr>
<td>or WMST 302W</td>
<td>Dimensions of Diversity: Intersectionality Among Women</td>
<td></td>
</tr>
<tr>
<td>WMST 390T</td>
<td>Women and Technology Worldwide*</td>
<td>3</td>
</tr>
<tr>
<td>Two additional WMST courses (at least one at the 400 level)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

* Meets impact of technology requirement.

Students must maintain a minimum cumulative grade point average of 2.0 in all courses required for the minor. 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).

Linked B.A./B.S. in Women's Studies and M.A. in Humanities

The linked program in Women's Studies and Humanities makes it possible for exceptional Women's Studies majors to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree. Students must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). For more information consult the Humanities section of this Catalog.

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. 96) 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.

Foreign Language 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 pursuing all other undergraduate degrees must meet the lower-level Language and Culture general education requirement.

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 World Languages and Cultures 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 World Languages and Cultures 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 World Languages and Cultures Department since its inception in 1992. Serving over 1,200 students each semester from the Department of World Languages and Cultures and the English Language Center, the center is committed to instructional technology for foreign language learning and quality instruction.

Bachelor of Arts–World Languages and Cultures

Lower-Division General Education

| Written Communication * | 6 |
| Oral Communication (satisfied in the major for French, German and Spanish concentrations by one of the following. Students in the world cultural studies concentration must complete a general education oral communication course.) | 0-3 |
| 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 for French, German and Spanish concentrations. Students in the world cultural studies concentration must demonstrate foreign language proficiency at the fourth-semester level.)

| Information Literacy and Research | 3 |
| Human Creativity | 3 |
| Interpreting the Past | 3 |

Literature

| WCS 100L Introduction to World Literatures and Cultures (required) | 3 |
| Philosophy and Ethics | 3 |
| The Nature of Science | 8 |
| Impact of Technology ** | 0-3 |
| Human Behavior | |
| GEOG 100S Cultural Geography (required) | 3 |
| Total Hours | 35-53 |

* Grade of C or better required in both courses and in ENGL 110C before declaring major.

** Satisfied by TLED 430W for teacher licensure students.

Core Requirements

| Option A: Another foreign language at any level or | 6 |
| 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 WCS 100L) 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 |
| 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 |
| Two FR 400-level electives | 6 |
| Four FR 300 or 400-level electives | 12 |
| Total Hours | 30 |

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 |
| Total Hours | 30 |

SPANISH

| SPAN 311 Communicative Competence: Speaking and Listening * | 3 |
| SPAN 312W Communicative Competence: Writing and Reading ** | 3 |
| SPAN 320 or SPAN 321 Spanish Culture and Civilization Latin American Culture and Civilization | 3 |
| SPAN 407 Advanced Grammar and Syntax (Offered in Fall) | 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 410 Spanish Applied Linguistics (Offered in Spring) or SPAN 415 Spanish Phonetics | 3 |
| Two SPAN 300 or 400-level electives | 6 |
| One SPAN 400-level elective | 3 |
| SPAN 475W Spanish Senior Research Seminar (Offered in Fall) | 3 |
| Total Hours | 30 |

* Satisfies oral communication

** Grade of C or better required

Old Dominion University 168
WORLD CULTURAL STUDIES

The world cultural studies concentration provides students the critical skills necessary to understand, identify, and approach global challenges and to critically evaluate and provide effective solutions for open-ended problems depending on varying cultural perspectives, values, and resources. Courses in this concentration are taught in English.

WCS 311 Communication Competence: Speaking and Listening 3
WCS 312W Communication Competence: Writing and Reading 3
WCS 321 Human Rights and World Literature and Cultures 3
WCS 400 Global Cultural Studies 3
WCS 407 Advanced Grammar and Syntax 3
300/400-level elective * 3
300/400-level elective * 3
300/400-level elective * 3
400-level elective * 3
Total Hours 30

* Electives may be chosen from WCS 300/400-level courses, 300/400-level courses in Arabic, Chinese, French, German, Japanese and Spanish offered by the World Languages and Cultures Department (if the student is proficient), or approved courses from the Business, Engineering, and Global Citizenship focus areas listed below.

Business Focus Area
The business focus area provides a critical advantage in understanding the global nexus of cultural influences in international business today.

ECON 450 International Economics 3
FIN 435 International Financial Management 3
INBU 431 Doing Business in Europe 3
INBU 432 Doing Business in Latin America 3
INBU 433 Doing Business in Asia 3
MGMT 462 Comparative International Management 3
MGMT 463 Management Seminar Abroad 3
MKTG 411 Multi-National Marketing 3
PHIL 303E Business Ethics 3
PHIL 344E Environmental Ethics 3
WCS 307 Understanding European Culture through Film 3
WCS 310 Japan: A Cultural Odyssey 3
WCS 330 Contemporary Cultures and Media 3
WCS 410 Berlin-Paris: Crucibles of European Ideas 3
WCS 445 German Cinema I 3
WCS 471 Hispanic Women Authors 3
WCS 476 German-Jewish Literature and Culture 3

Engineering Focus Area
The Engineering focus area bridges gaps between science and culture, incorporating skills in translational communication and understanding that will serve students interested in working for international corporations or in development sectors.

CEE 402 Professional Practice of Engineering 1
CEE 458 Sustainable Development 3
CEE 459 Biofuels Engineering 3
ECE 407 Introduction to Game Development 3
GEOG 305 World Resources 3

Global Citizenship Focus Area
In the global citizenship focus area, students learn skills necessary to approach global problems through in-depth analysis, inquiry into global challenges and cultural perspectives, and innovative paths to solutions.

CEE 458 Sustainable Development 3
COMM 306 Diplomatic Communication 3
COMM 337 Model League of Arab States 3
COMM 400W Intercultural Communication 3
COMM 471W International Film History 3
ECE 407 Introduction to Game Development 3
ENGL 371W Communication Across Cultures 3
GEOG 451 Europe 3
GEOG 452 Africa 3
GEOG 453 Asia 3
GEOG 455 The Middle East 3
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 Struggle for Democracy and Development in Latin America 3
PHIL 250E World Religions: Beliefs and Values 3
PHIL 290G Philosophy of Digital Culture 3
PHIL 353 Asian Religions 3
PHIL 485 Japanese Religion and Philosophy 3
POLS 324 International Relations Theory 3
POLS 325W World Politics 3
POLS 436 Japanese Politics 3
POLS 445 Globalization: Dynamics and Implications 3
POLS 462 Ethnic Conflict in the New Global Order 3
PSYC 420 Cross-Cultural Psychology 3
WCS 307 Understanding European Culture through Film 3
WCS 310 Japan: A Cultural Odyssey 3
WCS 330 Contemporary Cultures and Media 3
WCS 410 Berlin-Paris: Crucibles of European Ideas 3
WCS 445 German Cinema I 3
WCS 471 Hispanic Women Authors 3
WCS 476 German-Jewish Literature and Culture 3
WMST 390T Women and Technology Worldwide 3
WMST 401W Women: A Global Perspective 3

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

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.

Four-Year Plan - French concentration - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/worldlanguagesandcultures/wlc-french-bafouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Four-Year Plan - German concentration - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/worldlanguagesandcultures/wlc-german-bafouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Four-Year Plan - Spanish concentration - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/worldlanguagesandcultures/wlc-spanish-bafouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Four-Year Plan - World Cultural Studies concentration - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/worldlanguagesandcultures/wlc-wcs-bafouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, http://www.odu.edu/oce and review the Professional 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 Subject Assessment, French, German or Spanish World Language (formerly Praxis II) 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.

Background Clearance Requirement

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.
Virginia Board of Education Prescribed Assessments for Licensure

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.
- Praxis Subject Assessment, French World Language (test code 5174) – passing score of 163 required
- Praxis Subject Assessment, German World Language (test code 5183) – passing score of 163 required
- Praxis Subject Assessment, Spanish World Language (test code 5195) – passing score of 168 required

To review more information on the Virginia Board of Education prescribed assessments, visit the Teacher Education Services website, www.odu.edu/tes.

Graduation

Requirements for graduation include 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; 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.

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR 311</td>
<td>Communicative Competence: Speaking and Listening</td>
<td>3</td>
</tr>
<tr>
<td>FR 312W</td>
<td>Communicative Competence: Writing and Reading</td>
<td>3</td>
</tr>
<tr>
<td>FR 320</td>
<td>Contemporary France through the Media Francophone Civilization</td>
<td>3</td>
</tr>
<tr>
<td>FR 407</td>
<td>Advanced Grammar and Syntax</td>
<td>3</td>
</tr>
<tr>
<td>Six FR 300/400-level electives **</td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

Total Hours 30

* Satisfies oral communication requirement.

** At least six credits must be on the 400 level and one in literature.

Professional Education sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FL 452</td>
<td>Methods for Teaching Foreign Languages in Pre-K through Grade 12</td>
<td>3</td>
</tr>
<tr>
<td>FL 456</td>
<td>Seminar in Foreign Language Teacher Education</td>
<td>1</td>
</tr>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment of Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 33

* Satisfies impact of technology requirement.

Four-Year Plan - French Teaching Licensure - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/worldlanguagesandcultures/wlc-french-teachinglicensure-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Concentration in German with Licensure in Pre-K Through Grade 12

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GER 311</td>
<td>Communicative Competence: Speaking and Listening *</td>
<td>3</td>
</tr>
<tr>
<td>GER 312W</td>
<td>Communicative Competence: Writing and Reading</td>
<td>3</td>
</tr>
<tr>
<td>GER 321</td>
<td>German Civilization from the Middle Ages to World War I</td>
<td>3</td>
</tr>
<tr>
<td>GER 407</td>
<td>Advanced Grammar and Syntax</td>
<td>3</td>
</tr>
<tr>
<td>Six GER 300/400 level electives **</td>
<td></td>
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</tbody>
</table>

Total Hours 30

* Satisfies oral communication requirement.

** At least six credits must be on the 400 level and one in literature.

Professional Education sequence

<table>
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<tr>
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<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment of Education</td>
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<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
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<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
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<td>TLED 430W</td>
<td>PK-12 Instructional Technology</td>
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<td>TLED 485</td>
<td>Teacher Candidate Internship **</td>
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<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
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<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
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<tr>
<td>FL 452</td>
<td>Methods for Teaching Foreign Languages in Pre-K through Grade 12</td>
<td>3</td>
</tr>
<tr>
<td>FL 456</td>
<td>Seminar in Foreign Language Teacher Education</td>
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</table>

Total Hours 33

* Satisfies impact of technology requirement.
Four-Year Plan - German Teaching Licensure - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/worldlanguagesandcultures/wlc-german-teachinglicensure-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Concentration in Spanish with Licensure in Pre-K Through Grade 12

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 311</td>
<td>Communicative Competence: Speaking and Listening **</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 312W</td>
<td>Communicative Competence: Writing and Reading</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 320</td>
<td>Spanish Culture and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>or SPAN 321</td>
<td>Latin American Culture and Civilization</td>
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</tr>
<tr>
<td>Select one of the following</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SPAN 331</td>
<td>Introduction to Spanish Literature: Medieval to 1700</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 332</td>
<td>Introduction to Spanish Literature: 1700 to Present</td>
<td>3</td>
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<tr>
<td>SPAN 333</td>
<td>Introduction to Early Latin American Literature</td>
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<td>SPAN 334</td>
<td>Introduction to Modern Latin American Literature</td>
<td>3</td>
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<tr>
<td>SPAN 407</td>
<td>Advanced Grammar and Syntax</td>
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</tr>
<tr>
<td>SPAN 410</td>
<td>Spanish Applied Linguistics</td>
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<tr>
<td>or SPAN 415</td>
<td>Spanish Phonetics</td>
<td>3</td>
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<tr>
<td>Two SPAN 300 or 400-level electives</td>
<td>6</td>
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<tr>
<td>One SPAN 400-level elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SPAN 475W</td>
<td>Spanish Senior Research Seminar</td>
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</tr>
<tr>
<td>Total Hours</td>
<td>30</td>
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</tbody>
</table>

* Satisfies oral communication requirement.

Professional Education sequence

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<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment of Education</td>
<td>3</td>
</tr>
<tr>
<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>TLED 430W</td>
<td>PK-12 Instructional Technology</td>
<td>3</td>
</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
<tr>
<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
<td>3</td>
</tr>
<tr>
<td>FL 452</td>
<td>Methods for Teaching Foreign Languages in Pre-K through Grade 12</td>
<td>3</td>
</tr>
<tr>
<td>FL 456</td>
<td>Seminar in Foreign Language Teacher Education</td>
<td>1</td>
</tr>
<tr>
<td>Total Hours</td>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>

* Satisfies impact of technology requirement.

Four-Year Plan - Spanish Teaching Licensure - BA (http://catalog.odu.edu/undergraduate/collegeofartsletters/worldlanguagesandcultures/wlc-spanish-teachinglicensure-ba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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.

World Languages and Cultures Minors

The department offers minors in world languages and cultures 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. To declare a minor the student must have completed ENGL 110C and the 202 course in the language.

French Minor

Advisor: Elizabeth Black, eblack@odu.edu

Fifteen hours of 300/400-level courses in the language are required. Requirements are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR 311</td>
<td>Communicative Competence: Speaking and Listening **</td>
<td>3</td>
</tr>
<tr>
<td>FR 312W</td>
<td>Communicative Competence: Writing and Reading</td>
<td>3</td>
</tr>
<tr>
<td>Three FR courses at the 300/400 level</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

German Minor

Advisor: Frederick Lubich, flubich@odu.edu

Fifteen hours of 300/400-level courses in the language are required. Requirements are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GER 311</td>
<td>Communicative Competence: Speaking and Listening **</td>
<td>3</td>
</tr>
<tr>
<td>GER 312W</td>
<td>Communicative Competence: Writing and Reading</td>
<td>3</td>
</tr>
<tr>
<td>Three GER courses at the 300/400 level (GER 321 highly recommended)</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

Spanish Minor

Advisor: Luis Guadano, lguadano@odu.edu

Fifteen hours of 300/400-level courses in the language are required. Requirements are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 311</td>
<td>Communicative Competence: Speaking and Listening **</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 312W</td>
<td>Communicative Competence: Writing and Reading</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 320</td>
<td>Spanish Culture and Civilization</td>
<td>3</td>
</tr>
</tbody>
</table>
or SPAN 321 Latin American Culture and Civilization
Two SPAN courses at the 300/400 level 6
Total Hours 15

**Interdisciplinary Minor**

**World Cultures: Values and Visions**

**Coordinator:** Lee Slater, lslater@odu.edu

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
- COMM 400W Intercultural Communication 3
- ENGL 371W Communication Across Cultures 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
- IT 425 Information Systems for International Business 3
- MKTG 361 International Business Operations 3
- MKTG 411 Multi-National Marketing 3
- POLS 325W World Politics 3
- PSYC 420 Cross-Cultural Psychology 3
- SPAN 320 Spanish Culture and Civilization 3
- WCS 307 Understanding European Culture through Film 3
- WCS/JAPN 310 Japan: A Cultural Odyssey 3
- WCS/GER 410 Berlin-Paris: Crucibles of European Ideas 3
- WCS/SPAN 471 Hispanic Women Authors 3
- WCS 445/ COMM 444/GER 445 German Cinema I 3
- WCS/GER 476 German-Jewish Literature and Culture 3

Study Abroad: Any study abroad course at the 300-400 level that offers three credits can fulfill one course requirement for this minor. The coordinator for the minor can approve other courses not listed above to fulfill the minor provided they substantively address some aspect of world cultures.

**European Studies Minor**

**Coordinator:** Peter Schulman, 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 World Languages and Cultures, above 312W or the equivalent. One course must be outside the language of proficiency, or can be a WCS course with a European emphasis.
- Two courses from related disciplines outside of the Department of World Languages and Cultures.

**Option 2**

- Three courses from World Languages and Cultures, above 312W. One course must be outside the language of proficiency, or can be a WCS course with a European emphasis.
- One course from related disciplines outside of the World Languages and Cultures 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 World Languages and Cultures.

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:** Angélica Huizar, 683-3988

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

**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 Struggle for Democracy and Development in Latin America 3
### International Business

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INBU 432</td>
<td>Doing Business in Latin America</td>
<td>3</td>
</tr>
</tbody>
</table>

### Political Science

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 337</td>
<td>Latin American Politics</td>
<td>3</td>
</tr>
</tbody>
</table>

### Spanish

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 321</td>
<td>Latin American Culture and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 333</td>
<td>Introduction to Early Latin American Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 334</td>
<td>Introduction to Modern Latin American Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 449</td>
<td>Contemporary Spanish-American Drama</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 469</td>
<td>Hispanic Film</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 471</td>
<td>Hispanic Women Authors</td>
<td>3</td>
</tr>
</tbody>
</table>

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 Minor

**Coordinator:** Minori Marken, mmarken@odu.edu

The Japanese 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.

#### Prerequisite Courses: 12 credit hours

- **JAPN 111F** Beginning Japanese *6
- **JAPN 212** Intermediate Japanese II *6

#### Required Courses: 6 credit hours

- **JAPN 311** Communicative Competence: Speaking and Listening **3**
- **JAPN 312** Communicative Competence: Writing and Reading **3**

#### Electives: 6 credit hours

- Two JAPN courses at the 300/400 level **6**

* Not included in the calculation of the 2.00 grade point average required for the minor.

** JAPN 212 or equivalent is a prerequisite to JAPN 311.

### 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 396** Topics in Chinese
- **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.
Strome College of Business

Web Site: http://www.odu.edu/business

John F. Tanner, Dean
Kiran Karande, Associate Dean
Constance Merriman, Associate Dean for Undergraduate Programs
David Cook, Assistant Dean for Graduate Programs

Department Chairs:
Royce D. Burnett, Accountancy
Christopher Colburn, Economics
John M. Griffith, Finance
Ling Li, Information Technology and Decision Sciences
Anil Nair, Management
Mahesh Gopinath, Marketing
Samuel L. Brown, Public Service
Mark D. Rea, Military Science and Leadership

Center and Institute Directors:
David Selover, Center for Asian Business
Christopher Colburn, Center for Economic Education
James V. Koch, Dragas Center for Economic Analysis and Policy
Bruce Rubin, Insurance and Financial Services Center
Wayne Talley, Maritime Institute
J. Andrew Hansz, E.V. Williams Center for Real Estate

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 – AACSB International. 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, enterprise cybersecurity, finance, information systems and technology, international business, management, maritime and supply chain management, marketing, personal financial planning, real estate, and risk management and insurance. The College offers graduate programs in accounting, business administration, economics, maritime trade and supply chain management, 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

Strome College of Business engages participants in scholarly exploration and active learning, solving business and community challenges in a global arena to accelerate success.

Strome College of Business 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 regionally, nationally, and globally.

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.

Dragas Center for Economic Analysis and Policy

The primary objectives of the center 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 center 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

The mission of the E.V. Williams Center for Real Estate is to connect the multi-disciplinary analyses, innovative curriculum and research underway at Old Dominion University with students, industry and the public sector interested and engaged in the real estate and economic development communities. By hosting topical seminars on key development issues and working closely with real estate and economic development professionals, the E.V. Williams Center builds relationships throughout the community, to facilitate research, growth and development. The E.V. Williams Center publishes annual real estate market reviews on the office, industrial, retail, single family and multi-family real estate markets and sponsors the Hampton Roads Real Estate Market Review and Forecast.
Distance Education
The college offers several degrees online through Distance Learning to students throughout 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 through different delivery technologies. Minors in several disciplines are also available.

Bachelor of Arts - Economics
Christopher 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
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. All candidates for admission to the program should contact the Department of Economics directly (757-683-3567) for an application to the program. Candidates for admission to the program should contact the Department of Economics directly (757-683-3567) for an application to the program. Candidates for admission to the program should contact the Department of Economics directly (757-683-3567) for an application to the program. Candidates for admission to the program should contact the Department of Economics directly (757-683-3567) for an application to the program.

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 included in each:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
<td>3</td>
</tr>
<tr>
<td>MATH 162M</td>
<td>Precalculus I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201S</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202S</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 402</td>
<td>Transportation Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 435</td>
<td>Health Economics: A Global Perspective</td>
<td>3</td>
</tr>
<tr>
<td>ECON 445W</td>
<td>Urban Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 447W</td>
<td>Natural Resource and Environmental Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 454W</td>
<td>Economic Development</td>
<td>3</td>
</tr>
</tbody>
</table>

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 Economics course. Forms to request a PRW are available at the Strome College of Business 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 BA with 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 following ECON courses:

- **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

### Four-Year Plan - Economics - BA

(http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/baeconomics/economics-ba-fouyearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Curriculum

#### Freshman

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>3</td>
<td>ENGL 211C or 221C</td>
<td>3</td>
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<tr>
<td>MATH 162M</td>
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<td>MATH 200</td>
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<td>Language and Culture 101F</td>
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<td>Human Behavior Way of Knowing</td>
<td>3</td>
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<tr>
<td>Information Literacy and Research Requirement</td>
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<td>Language and Culture 102F</td>
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<td>COMM 101R</td>
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<td>Interpreting the Past Way of Knowing</td>
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#### Sophomore

<table>
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<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
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<tr>
<td>ECON 201S</td>
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<td>ECON 202S</td>
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<td>Literature Way of Knowing</td>
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<td>BNAL 206</td>
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<td>Nature of Science I Way of Knowing</td>
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<td>Nature of Science II Way of Knowing</td>
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<td>Philosophy/Ethics Way of Knowing</td>
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<td>Interpreting the Past Way of Knowing (dept requirement)</td>
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### Junior

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<td>BNAL 306</td>
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<td>ECON Elective</td>
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<td>Upper-division General Education Course</td>
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<td>Impact of Technology Way of Knowing</td>
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<td>Human Creativity Way of Knowing</td>
<td>3</td>
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<tr>
<td>Free Elective (not ECON)</td>
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### Senior

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<tr>
<th>First Term</th>
<th>Hours</th>
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<tr>
<td>ECON 450</td>
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<td>ECON Electives</td>
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<td>ECON Writing-Intensive Course</td>
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<td>Non-Business Elective</td>
<td>3</td>
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<td>ECON Elective</td>
<td>3</td>
<td>Free Elective (not ECON)</td>
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<td>Upper-division General Education Course</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Free Elective (not ECON)</td>
<td>3</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>15</td>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>

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
All economics courses taken, except ECON 200S (which does not count towards any degree in the Strome College of Business) 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 World Languages and Cultures 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 non-business 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. to M.B.A. (Master of Business Administration) Linked Program**

The linked BA/MBA program is an early entry to the MBA program of study. The early-entry program is designed for well qualified non-business undergraduate ODU students to start their MBA program prior to completing their undergraduate degree. Well qualified non-business undergraduate students may take MBA-level courses as early as three semesters prior to graduation and count up to 12 graduate credits toward their undergraduate degree. Students participating in the early-entry program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Early-entry program students should carefully consider their undergraduate degree program requirements when planning their course of study. Students in the early-entry program work in close consultation with the MBA Program Office to develop an individualized plan of study based on the required coursework outlined 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)

Students who have done exceptionally well in their undergraduate work may qualify for a GMAT waiver. These candidates will have:

1. Completed all lower-level general education requirements
2. Completed at least 24 credit hours at ODU with a cumulative GPA of at least 3.5
3. Achieved junior standing

**Admissions Procedure**

Students interested in the early-entry program should complete the GMAT at least two semesters prior to the semester in which they wish to enroll. Applications to the MBA program should be submitted online following published deadlines in order to begin coursework in the desired semester. When completing the application for admission, students need to select an official admission date that is the semester immediately following their anticipated undergraduate graduation.

Students interested in the program should contact the MBA Program Office as early as possible to discuss their plans for early entry. Once admitted to the program, the MBA program manager will act as the student’s co-advisor, along with the chief departmental advisor or chief discipline advisor in the student's undergraduate major. The MBA Program Office is located in 1026 Constant Hall. The phone number is 757-683-3585 and email is mbainfo@odu.edu.

**Requirements for the M.B.A.**

Admitted students may begin to complete courses from the MBA pre-core and/or core as soon as three semesters prior to anticipated undergraduate graduation. Twelve graduate credit hours can count toward the undergraduate degree and can meet upper-level General Education requirements. Students will work closely with their undergraduate advisor to confirm what MBA coursework can be used for the fulfillment of their undergraduate degree requirements.

The entire program for a general MBA is 45 credit hours for non-business majors. Courses will be available online and on main campus except for the pre-core, which is only offered online. Those students required to complete the pre-core must complete all pre-core requirements before being allowed to progress to any core courses.

Old Dominion University 178
Students must satisfactorily complete:

**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 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 Leadership Dynamics 2
- MGMT 612 Managing in Contemporary Organizations 2
- MGMT 621 Strategic Management 4
- MKTG 608 Fundamentals of Contemporary Marketing 2
- MKTG 617 Marketing Strategy 2
- OMPT 615 Operations & Supply Chain Management 2
- Elective Credit Hours 4
- Total Hours 45

* Each core course is offered once per academic year in a specific semester both online and on-campus to maximize opportunity for degree completion, subject to sufficient demand.

**Graduate Writing Proficiency**

Students in the MBA program are required to meet the Old Dominion University writing requirement. This can be achieved in one of two ways: (1) earn a raw score of 4.5 or above on the Analytical Writing portion of the GMAT/GRE or (2) successfully complete MBA 621: Effective Business Writing.

**Continuance Policy**

To remain in good academic standing after admission to the program, students must maintain a minimum cumulative grade point average of 3.0 in all graduate coursework attempted at the University. Students who fall below this minimum standard will have 12 credit hours to remedy this deficiency.

Further, students may be removed from the program when they earn (1) a grade of C or lower in two courses in the pre-core, or (2) a grade of C or lower in two courses in the core and elective coursework, or (3) a failing grade in any course.

**B.A. in Economics to M.P.A. (Master of Public Administration) Linked Program**

The linked B.A. in economics to M.P.A. program provides qualified Old Dominion University undergraduate students with the opportunity to earn a master's degree in public administration while taking credits in the M.P.A. program as an undergraduate student. The program is designed for highly motivated students with the desire to immediately continue their education after the bachelor's degree. The program is especially relevant to individuals seeking to work (or currently working) in the public or nonprofit sectors, but is suitable for students from any undergraduate major. Graduate courses may be taken during the fall and spring semester of the student's senior undergraduate year. Up to 12 graduate credits can count toward both the undergraduate and graduate degree and can meet upper-level General Education requirements. After receiving the undergraduate degree, a student will continue with the M.P.A. program, taking M.P.A. courses until completing the required 39 credit hours. Students in the linked program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree).

**Admission Requirements**

A potential candidate will have:

1. Completed all lower level general education requirements
2. Achieved a cumulative GPA of at least 3.0 at the end of the junior year

Requirements for admission to the graduate program can be found in the School of Public Service section of the Graduate Catalog. For additional information, please contact the School of Public Service in the Strome College of Business.

**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 either ECON 304 or ECON 305 and in three other 300-400 level ECON courses. 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ARTH 435W</td>
<td>Modern Architecture</td>
<td>3</td>
</tr>
<tr>
<td>CHP 415W</td>
<td>Critical Issues in Public/Community Health Administration</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 323</td>
<td>Police in American Society</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 325</td>
<td>Women and Crime</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 355</td>
<td>Crime and the Community</td>
<td>3</td>
</tr>
<tr>
<td>CRJS 441</td>
<td>Drugs and Society</td>
<td>3</td>
</tr>
<tr>
<td>ECON 402</td>
<td>Transportation Economics</td>
<td>3</td>
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<tr>
<td>ECON 445W</td>
<td>Urban Economics</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 310</td>
<td>Geography of the City</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 411</td>
<td>Urban and Regional Planning</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 412</td>
<td>Cities of the World</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 431</td>
<td>Community Psychology</td>
<td>3</td>
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<tr>
<td>PRTS 433</td>
<td>Camp Administration</td>
<td>3</td>
</tr>
<tr>
<td>CRJS/SOC 444</td>
<td>Community Justice</td>
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</tbody>
</table>

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 challenge and support students in self-
exploration and, through advising, provide resources for them to develop an
achievable plan for success. Our vision is for students to be aware of their
academic, personal, and professional goals; empowered to pursue them; and
confident in their ability to accomplish them.

Our professional advisors work with all freshmen, new transfer students,
or students changing majors regarding admission, continuance, and
graduation requirements and required curricula for the majors and minors
offered by the College. Additionally, the office serves all Strome College of
Business students as a satellite of Career Development Services, assisting
students with internships and job placement.

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).
However, students who have completed Step 1 Admission but not 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: These
students will need a Program Restriction Waiver (PRW) to enroll in any
300/400 level business or economics course, with the exception of FIN 323,
MGMT 325, MKTG 311, and OPMT 303. Intended Business majors do not
need a PRW to enroll in those four courses. However, there may be
class standing and/or prerequisite requirements. Forms to request a PRW
to enable enrollment in other 300/400 level business or economics courses
before completion of Step 2 admission are available on the Strome College
of Business 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.
3. Students wishing to satisfy the Impact of Technology requirement may
enroll in IT 360T.
4. 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.
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 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. Students will remain "Intended"
business majors until their Step 2 application has been approved.

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 1 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 Career Development Services 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 Associate Dean (Room 2004 Constant Hall) in writing for a one-time, one-semester waiver of the restriction 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 BSBA Core coursework. Note: students pursuing Step 2 admission will need a Program Restriction Waiver (PRW) to enroll in any 300/400 level business course with the exception of FIN 323, MGMT 325, MKTG 311, and OPMT 303. Forms to request a PRW are available on the College's 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 BSBA Core 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.

Fast Track Admission to the Bachelor's Degree Program in Business Administration

Students who complete the five courses required for Step 1 of the BSBA admission process (see above) with a grade of B or higher in all five and have a cumulative GPA of 3.0 or higher are eligible for Fast Track Admission. Fast Track Admission allows the student to become fully admitted to the BSBA degree program and move from an Intended to a Declared major at the time their Step 1 application is processed. Students transferring in any of the Step 1 courses are eligible for Fast Track Admission after completing at least 12 credits of course work at ODU if they present an unofficial transcript showing earned grades of B or higher in the Step 1 courses transferred to ODU, and have a cumulative GPA of 3.0 or higher at all prior institutions and at ODU.

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 Core 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 BSBA Core 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 Strome College of Business.
2. BSBA Termination. A student on BSBA Academic Alarm who fails to achieve a semester GPA in the BSBA Core of at least 2.00 at the end of the next semester of attendance 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.
A student on BSBA Academic Alarm who fails to achieve a semester GPA in the BSBA Core 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 BSBA Core 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, BSBA Core course grades of C- or lower earned before termination will not be included in future BSBA Core 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 business administration majors is met with MGMT 485W. Students must earn a grade of C or better in MGMT 485W in order to graduate. Exception: students majoring in Economics must complete MGMT 485W, but meet the writing intensive requirement by earning a grade of C or better either in MGMT 485W or in one of the ECON Writing Intensive courses.

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

All business students will complete either IT 150G (recommended) or any "G" course from the approved General Education information literacy and research course list.

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 201</td>
<td>Principles of Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 202</td>
<td>Principles of Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201S</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202S</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>FIN 331</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>MKTG 311</td>
<td>Marketing Principles and Problems</td>
<td>3</td>
</tr>
</tbody>
</table>

Students are advised to contact the Office of Prior Learning Assessment for more information regarding CLEP and other prior learning assessment 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.

**Practical Work Experience for Business Administration Majors**

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 Development Services 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 prior learning credit as defined in the section on Credit Options at the Undergraduate Level in this catalog.) For details see the Career Development Services 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 101R</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 221C</td>
<td>Introduction to Writing in Business,</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Education and Social Sciences</td>
<td></td>
</tr>
<tr>
<td>or ENGL 211C</td>
<td>English Composition</td>
<td></td>
</tr>
<tr>
<td>or ENGL 231C</td>
<td>Introduction to Technical Writing</td>
<td></td>
</tr>
<tr>
<td>MATH 162M</td>
<td>Precalculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 200</td>
<td>Calculus for Business and Economics</td>
<td>3</td>
</tr>
</tbody>
</table>

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 (Prior Learning Assessment 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).

Additionally, students must attain a minimum overall grade point average of 2.00 in the BSBA Core listed below. Only courses completed at Old Dominion University will be used to compute the BSBA Core average. Students with an IT major are not required to take IT 360T, so the BSBA Core grade point average is computed using the remaining courses. If the BSBA Core 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, BSBA Core 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>English Composition (C or better)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 162M</td>
<td>Precalculus I (C or better)</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 201</td>
<td>Principles of Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201S</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202S</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 206</td>
<td>Business Analytics I</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 230E</td>
<td>Introduction to Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Upper-level ethics course**
Lower-Division General Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 101R</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 221C</td>
<td>Introduction to Writing in Business, Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>and Social Sciences (C or better)</td>
<td></td>
</tr>
<tr>
<td>ENGL 221C</td>
<td>Introduction to Writing in Business, Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>and Social Sciences (C or better)</td>
<td></td>
</tr>
<tr>
<td>ENGL 231C</td>
<td>Introduction to Technical Writing (C or better)</td>
<td></td>
</tr>
</tbody>
</table>

Human Creativity Way of Knowing 3
Information Literacy and Research 3
Interpreting the Past Way of Knowing 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 211C</td>
<td>English Composition</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 231C</td>
<td>Introduction to Technical Writing</td>
<td></td>
</tr>
<tr>
<td>PHIL 230E</td>
<td>Introduction to Ethics (Or an upper-level ethics course)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 162M</td>
<td>Precalculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 200</td>
<td>Calculus for Business and Economics</td>
<td>3</td>
</tr>
</tbody>
</table>

BSBA Core

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 201</td>
<td>Principles of Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 202</td>
<td>Principles of Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 206</td>
<td>Business Analytics I</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 306</td>
<td>Business Analytics II</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201S</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202S</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 301</td>
<td>Managerial Economics</td>
<td>3</td>
</tr>
<tr>
<td>FIN 323</td>
<td>Introductory Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>FIN 331</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>IT 360T</td>
<td>Principles of Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 485W</td>
<td>Business Policy and Strategy (C or better)</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 311</td>
<td>Marketing Principles and Problems</td>
<td>3</td>
</tr>
<tr>
<td>OPMT 303</td>
<td>Operations Management</td>
<td>3</td>
</tr>
</tbody>
</table>

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
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.

B.S.B.A. to M.B.A. (Master of Business Administration) Linked Program
The linked BSBA is an early entry to the MBA program of study. The early-entry program is designed for well-qualified ODU business administration undergraduate students to begin the MBA program prior to their completion of the undergraduate degree. Well-qualified undergraduate students may take MBA-level courses as early as three semesters prior to their graduation and count up to 10 graduate credit hours toward their undergraduate degree. Students participating in the early-entry program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Early-entry program students should carefully consider their undergraduate degree program requirements when planning their course of study. Students in the early-entry program work in close consultation with the MBA Program Office to develop an individualized plan of study based on the required coursework outlined 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 cumulative GPA of at least 3.0
4. A minimum index of 1200 (index is computed as 200 times the ODU GPA plus GMAT score)

Students who have done exceptionally well in their undergraduate coursework may qualify for a GMAT waiver. These candidates will have:
1. Completed all lower-level general education requirements
2. Completed at least 24 credit hours at ODU with a cumulative GPA of at least 3.5
3. Achieved junior standing

Admissions Procedure
Students interested in the early-entry program should complete the GMAT at least two semesters prior to the semester in which they wish to enroll. Applications to the MBA program should be submitted online following published deadlines in order to begin coursework in the desired semester. When completing the application for admission, students need to select an official admission date that is the semester immediately following their anticipated undergraduate graduation.

Students interested in the program should contact the MBA Program Office as early as possible to discuss their plans for early entry. Once admitted to the program, the MBA program manager will act as the student’s co-advisor, along with the chief departmental advisor or chief discipline advisor in the student’s undergraduate major. The MBA Program Office is located in 1026 Constant Hall. The phone number is 757-683-3585 and email is mbainfo@odu.edu.

Requirements for the M.B.A.
The MBA degree requires the completion of 40 credit hours for business administration majors. Depending upon the coursework completed for their undergraduate major, students may be required to take one or more one-credit hour courses from the MBA pre-core. Pre-core courses are available only online and consist of the following: MBA 600, MBA 601, MBA 602, MBA 603, and MBA 604. Students will work closely with their undergraduate advisor to confirm what MBA coursework can be used for the fulfillment of their undergraduate degree requirements.

Students must satisfactorily complete:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA Core *&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT 609</td>
<td>Managerial Accounting</td>
<td>2</td>
</tr>
<tr>
<td>ACCT 611</td>
<td>Financial Accounting</td>
<td>2</td>
</tr>
<tr>
<td>BNAL 606</td>
<td>Statistics for Managers</td>
<td>2</td>
</tr>
<tr>
<td>BNAL 610</td>
<td>Fundamentals of Business Analytics</td>
<td>2</td>
</tr>
<tr>
<td>ECON 607</td>
<td>Managerial Economics</td>
<td>2</td>
</tr>
<tr>
<td>ECON 618</td>
<td>Global Macroeconomics</td>
<td>2</td>
</tr>
<tr>
<td>FIN 613</td>
<td>Financial Management</td>
<td>2</td>
</tr>
<tr>
<td>FIN 616</td>
<td>Investments and Portfolio Management</td>
<td>2</td>
</tr>
<tr>
<td>FIN 619</td>
<td>Business Law and Ethics</td>
<td>2</td>
</tr>
<tr>
<td>IT 614</td>
<td>Information and Knowledge Management</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 605</td>
<td>Leadership Dynamics</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 612</td>
<td>Managing in Contemporary Organizations</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 608</td>
<td>Fundamentals of Contemporary Marketing</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 617</td>
<td>Marketing Strategy</td>
<td>2</td>
</tr>
<tr>
<td>OPMT 615</td>
<td>Operations &amp; Supply Chain Management</td>
<td>2</td>
</tr>
<tr>
<td>Capstone</td>
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<td></td>
</tr>
<tr>
<td>INBU 620</td>
<td>International Business Issues</td>
<td>2</td>
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<tr>
<td>MGMT 621</td>
<td>Strategic Management</td>
<td>4</td>
</tr>
<tr>
<td>Elective Credit Hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Each core course is offered once per academic year in a specific semester both online and on-campus to maximize opportunity for degree completion, subject to sufficient demand.

Graduate Writing Proficiency
Students in the MBA program are required to meet the Old Dominion University writing requirement. This can be achieved in one of two ways: (1) earn a raw score of 4.5 or above on the Analytical Writing portion of the GMAT/GRE or (2) successfully complete MBA 621: Effective Business Writing.

Continuance Policy
To remain in good standing after admission to the program, students must maintain a minimum cumulative grade point average of 3.0 in all graduate coursework attempted at the University. Students who fall below this minimum standard will have 12 credit hours to remedy this deficiency.

Further, students may be removed from the program when they earn (1) a grade of C or lower in two courses in the pre-core, or (2) a grade of C or lower in two courses in the core and elective coursework, or (3) a failing grade (F) in any course.

B.S.B.A. to M.P.A. (Master of Public Administration) Linked Program
The linked B.S.B.A. to M.P.A. program provides qualified Old Dominion University undergraduate students with the opportunity to earn a master's degree in public administration while taking 12 credits of the M.P.A. program as an undergraduate student. The program is designed for highly motivated students with the desire to immediately continue their education after the bachelor's degree. The program is especially relevant to individuals
seeking to work (or currently working) in the public or non-profit sectors, but is suitable for students from any undergraduate major. Graduate courses may be taken during the fall and spring semester of the student's senior undergraduate year. After receiving the undergraduate degree, a student will continue with the M.P.A. program, taking M.P.A. courses until completing the required 39 credit hours. Students in the linked program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree).

**Admission Requirements**

A potential candidate will have:

1. Completed all lower level general education requirements
2. Achieved a cumulative GPA of at least 3.0 at the end of the junior year

Requirements for admission to the graduate program can be found in the School of Public Service section of the Graduate Catalog. For additional information, please contact the School of Public Service in the Strome College of Business.

**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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 332</td>
<td>Introductory Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>MKTG 311</td>
<td>Marketing Principles and Problems</td>
<td>3</td>
</tr>
<tr>
<td>IT 360T</td>
<td>Principles of Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>OPMT 303</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

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 School of Public Service. 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, PAS 412, PAS 413 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAS 300</td>
<td>Foundations of Public Service</td>
<td>3</td>
</tr>
<tr>
<td>PAS 301</td>
<td>Ethics, Governance and Accountability in Public Service</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

Select at least one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAS 395</td>
<td>Selected Topics in Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>PAS 408</td>
<td>Public Service Films</td>
<td>3</td>
</tr>
<tr>
<td>PAS 409</td>
<td>Leadership and Cultural Competence</td>
<td>3</td>
</tr>
<tr>
<td>PAS 410</td>
<td>Public and Non-profit Organization</td>
<td>3</td>
</tr>
<tr>
<td>PAS 411</td>
<td>Multi-Sector Partnerships for Public Service</td>
<td>3</td>
</tr>
<tr>
<td>PAS 412</td>
<td>Public Service Practice</td>
<td>3</td>
</tr>
<tr>
<td>PAS 413</td>
<td>Public Service Entrepreneurship</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following (if needed):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJS 444</td>
<td>Community Justice</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 494</td>
<td>Entrepreneurship in Human Services and Non-Profit Fundraising</td>
<td>3</td>
</tr>
<tr>
<td>PAS 368</td>
<td>Internship in Public Service</td>
<td>3</td>
</tr>
<tr>
<td>PAS 497</td>
<td>Independent Study in Public Service</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 410</td>
<td>Social and Political Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>POLS 300</td>
<td>Introduction to Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>POLS 309</td>
<td>Race, Culture and Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>SOC 300</td>
<td>Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC 325</td>
<td>Social Welfare</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

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**

Royce D. Burnett, Chair
Laurie Henry, Chief School of Accountancy Undergraduate Advisor

Accounting, as the world's oldest information system, provides information for most government, non-profit, and business decisions. Accounting graduates pursue successful careers in the public or private sectors. The undergraduate program in accounting at Old Dominion University is one 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 Bachelor of Science in Business Administration (BSBA) accounting concentration provides students with technical accounting knowledge, the ability to analyze problems, communicate solutions, interact with colleagues, and successfully handle ethical issues appropriate for staff-level positions. The program provides, at a minimum, 24 hours of accounting, which is sufficient for a graduate to sit for most accounting professional licensure and certification exams.

**Accounting Course Work**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 305</td>
<td>Essentials of Financial Accounting I*</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 306</td>
<td>Essentials of Financial Accounting II*</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 307</td>
<td>Essentials of Financial Accounting III*</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 311</td>
<td>Managerial Accounting*</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 411</td>
<td>Financial Auditing*</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 425</td>
<td>Taxation of Individuals*</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 426</td>
<td>Taxation of Business Entities*</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 460</td>
<td>Accounting Information Systems**</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 450</td>
<td>International and Advanced Accounting*</td>
<td>3</td>
</tr>
</tbody>
</table>

Old Dominion University 186
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 450</td>
<td>International Economics</td>
<td></td>
</tr>
<tr>
<td>FIN 435</td>
<td>International Financial Management</td>
<td></td>
</tr>
<tr>
<td>IT 425</td>
<td>Information Systems for International Business</td>
<td></td>
</tr>
<tr>
<td>MGMT 361</td>
<td>International Business Operations</td>
<td></td>
</tr>
<tr>
<td>MGMT 462</td>
<td>Comparative International Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 463</td>
<td>Management Seminar Abroad</td>
<td></td>
</tr>
<tr>
<td>MKTG 411</td>
<td>Multi-National Marketing</td>
<td></td>
</tr>
<tr>
<td>MSCM 370</td>
<td>International Shipping</td>
<td></td>
</tr>
</tbody>
</table>

Free Elective 3
300-400 Level Free Elective 3
Total Hours 33

* Grade of C- or higher required.
** Grade of C- or higher required. A comprehensive assessment exam is given in ACCT 460 that covers the material in the eight required ACCT courses.

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 coursework for graduation are: all 300- and/or 400-level ACCT courses. In addition to an overall and major grade point average of 2.0, students must complete ACCT 305, Essentials of Financial Accounting I, 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.

Non-Required Electives

All accounting students may take one of these electives, and use the course as a free elective or 300-400 level free elective, if they have completed ACCT 305, Essentials of Financial Accounting I, with a C or better and ACCT 306, Essentials of Financial Accounting II, with a C- or better:

- ACCT 367 Cooperative Education 1-3
- ACCT 368 Student Internship 1-3
- ACCT 369 Practicum 1-3
- ACCT 405 Accounting and Auditing in the Public/Nonprofit Sector 3
- ACCT 422 Tax Research 3
- ACCT 450 International and Advanced Accounting 3
- ACCT 495 Selected Topics in Accounting 1-3

Four-Year Plan - Accounting Major - BSBA (http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbaaccounting/accounting-bsba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Accounting Minor

A minor in accounting requires the completion of ACCT 305 with a grade of C or better, ACCT 306 with a C- or better, and 6 hours of 300- and/or 400-level accounting courses. All accounting courses at the 300 and 400 levels must be preceded by listed prerequisites with:

- ACCT 201 Principles of Financial Accounting 6
  or
- ACCT 226 Honors: Principles of Financial Accounting 6
- ACCT 202 Principles of Managerial Accounting
  and
- ACCT 227 Honors: Principles of Managerial Accounting

As prerequisites to:

- ACCT 305 Essentials of Financial Accounting I 3

Students cannot use 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 ACCT 305, and a grade of C- or better is required in all other 300- and/or 400-level accounting courses counted toward the minor. A minimum of 6 hours in upper-level courses in the minor must be taken through courses offered by Old Dominion University.

Bachelor of Science in Business Administration - Business Analytics

Ling Li, Chair
Weiyoung Zhang, Assistant 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>or IT 360T</td>
<td>Principles of Information Technology</td>
<td></td>
</tr>
<tr>
<td>IT 205</td>
<td>Introduction to Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT 363</td>
<td>Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>IT 410</td>
<td>Business Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>IT 450</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 301</td>
<td>Spreadsheet and Data Management Techniques for Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 406</td>
<td>Advanced Spreadsheet-Based Data Analytics</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 407</td>
<td>Prescriptive Analytics of Management Science</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 415</td>
<td>Advanced Business Analytics/Big Data Applications</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 432</td>
<td>Predictive Analytics for Business</td>
<td>3</td>
</tr>
<tr>
<td>or BNAL 403</td>
<td>Data Visualization and Exploration</td>
<td></td>
</tr>
<tr>
<td>BNAL 476</td>
<td>Simulation Modeling and Analysis for Business Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

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

Total Hours 33

* Business Analytics majors who take IT 363 will be exempt from taking IT 360T as a core course.
All major courses except the international course are included when calculating the student’s grade point average in the major.

### Business Analytics Concentrations in the Business Functional Areas

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNAL 407</td>
<td>Prescriptive Analytics of Management Science</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 415</td>
<td>Advanced Business Analytics/Big Data Applications</td>
<td>3</td>
</tr>
<tr>
<td>BNAL 476</td>
<td>Simulation Modeling and Analysis for Business Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Major Electives

Select two from the following:

- BNAL 301 Spreadsheet and Data Management Techniques for Decision Making
- BNAL 403 Data Visualization and Exploration
- BNAL 406 Advanced Spreadsheet-Based Data Analytics
- BNAL 432 Predictive Analytics for Business

Select one from the following list (may not use the same course from both lists):

- ACCT 311 Managerial Accounting
- BNAL 301 Spreadsheet and Data Management Techniques for Decision Making
- BNAL 368 Internship
- BNAL 403 Data Visualization and Exploration
- BNAL 406 Advanced Spreadsheet-Based Data Analytics
- 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 363 Systems Analysis and Design
- MGMT 430 Compensation Management
- MKTG 475 Marketing Analytics
- 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

Approved International Business Requirement

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

ECON 450 International Economics

**Business Analytics in Finance**

Two approved 300-400 level FIN courses

FIN 435 International Financial Management

**Business Analytics in International Business**

ECON 450 International Economics

FIN 435 International Financial Management

MKTG 411 Multi-National Marketing

**Business Analytics in Information Technology**

Two approved 400-level IT courses

Approved International Business Requirement

**Business Analytics in Management**

Two approved 300-400 level MGMT courses

MKTG 361 International Business Operations

or MKTG 462 Comparative International Management

**Business Analytics in Marketing**

One approved 300-400 level MKTG course

MKTG 411 Multi-National Marketing

MKTG 475 Marketing Analytics

**Business Analytics in Maritime and Supply Chain Management**

Two approved MSCM courses

MSCM 370 International Shipping

**Electives**

- 200-400 Level Business Elective **
- 300-400 Level Business Elective **

**Total Hours**

33

* 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 business analytics major.

** Can be any 200-400 or 300-400 level course offered by the Strone 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 the major are: BNAL 407, BNAL 415, BNAL 476, and all courses taken from the major elective and concentration area elective listings.

**Four-Year Plan - Business Analytics Major - BSBA**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.
**Business Analytics Minor**

The minor in Business Analytics requires five courses (15 hours) comprised of:

- **BNAL 301** Spreadsheet and Data Management Techniques for Decision Making 3
- **OPMT 303** Operations Management 3

**One of the following:**

- **BNAL 407** Prescriptive Analytics of Management Science 3
- **BNAL 476** Simulation Modeling and Analysis for Business Systems 3

**Two of the following:**

- **BNAL 403** Data Visualization and Exploration 3
- **BNAL 406** Advanced Spreadsheet-Based Data Analytics 3
- **BNAL 407** Prescriptive Analytics of Management Science 3
- **BNAL 415** Advanced Business Analytics/Big Data Applications 3
- **BNAL 432** Predictive Analytics for Business 3
- **BNAL 476** Simulation Modeling and Analysis for Business Systems 3

At least two of the five 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 three additional courses.

**Bachelor of Science in Business Administration - Economics**

Christopher 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 ECON 304, ECON 305, ECON 450, and three 300-400 level ECON electives, not including 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 *

---

**Business Systems**

- **ECON 301** and ECON 436 (ECON 436 does not count toward the major in economics).

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).

**Four-Year Plan - Economics Major - BSBA** ([http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbaeconomics/economics-bsba-fouryearplan](http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbaeconomics/economics-bsba-fouryearplan))

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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 either ECON 304 or ECON 305, and in three other 300-400 level ECON courses. 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 - Financial Management**

John Griffith, Chair and Chief Departmental Advisor

Financial management comprises four majors: finance, personal financial planning, real estate, and risk management and insurance. All satisfy the requirements listed below under one of the majors. 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 entreprenuers running their own businesses. There are many opportunities for financial planning graduates due to the shift in business and government away from company provided pension plans to plans individuals have to fund and manage. Opportunities exist as independent planners, in human resource departments, as well as in the investments and insurance brokerage industries. Real estate graduates are employed as appraisers, sales and leasing agents, property managers, developers, and lending officers. Risk management and insurance graduates become corporate risk managers; employee benefits specialists; business continuity professionals; loss control specialists; and underwriters, claims adjusters, actuaries, field reps, and producers (both agents and brokers) for personal and commercial lines property-casualty and life-health insurers.

**Four-Year Plan - Finance - BSBA**

(http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbafinance/finance-bsba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Finance Major Course Work**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 317</td>
<td>Principles of Insurance and Risk Management</td>
<td>3</td>
</tr>
<tr>
<td>or FIN 319</td>
<td>Principles of Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>FIN 431</td>
<td>Investments</td>
<td>3</td>
</tr>
<tr>
<td>FIN 432</td>
<td>Intermediate Financial Management *</td>
<td>3</td>
</tr>
<tr>
<td>FIN 435</td>
<td>International Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>FIN 439</td>
<td>Financial Decision Making</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Electives

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 433</td>
<td>Introduction to Futures and Options</td>
<td>3</td>
</tr>
<tr>
<td>FIN 434</td>
<td>Management of Financial Institutions</td>
<td>3</td>
</tr>
<tr>
<td>FIN 441</td>
<td>Student Managed Investment Fund</td>
<td>3</td>
</tr>
<tr>
<td>FIN 497</td>
<td>Selected Topics in Finance</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 301</td>
<td>Intermediate Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>or ACCT 311</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ECON 431</td>
<td>Money and Banking</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 317</td>
<td>Principles of Insurance and Risk Management</td>
<td>3</td>
</tr>
<tr>
<td>or FIN 319</td>
<td>Principles of Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>FIN 367</td>
<td>Cooperative Education</td>
<td>3</td>
</tr>
<tr>
<td>FIN 368</td>
<td>Finance, Real Estate and Insurance Internship</td>
<td>3</td>
</tr>
<tr>
<td>FIN 369</td>
<td>Finance, Real Estate and Insurance Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

**Four-Year Plan - Personal Financial Planning - BSBA**

(http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbafinance/finance-personalfinplan-bsba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Personal Financial Planning Major Course Work**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 210S</td>
<td>Personal Financial Literacy</td>
<td>3</td>
</tr>
<tr>
<td>FIN 317</td>
<td>Principles of Insurance and Risk Management</td>
<td>3</td>
</tr>
<tr>
<td>FIN 411</td>
<td>Employee Benefit Planning</td>
<td>3</td>
</tr>
<tr>
<td>FIN 414</td>
<td>Estate Planning</td>
<td>3</td>
</tr>
<tr>
<td>FIN 415</td>
<td>Capstone in Financial Plan Development</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Name</td>
<td>Hours</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>FIN 431</td>
<td>Investments</td>
<td>3</td>
</tr>
<tr>
<td>FIN 435</td>
<td>International Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 421</td>
<td>Taxation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Select two of the following Major Electives:</strong></td>
<td>6</td>
</tr>
<tr>
<td>FIN 319</td>
<td>Principles of Real Estate</td>
<td></td>
</tr>
<tr>
<td>FIN 367</td>
<td>Cooperative Education</td>
<td></td>
</tr>
<tr>
<td>FIN 368</td>
<td>Finance, Real Estate and Insurance Internship</td>
<td></td>
</tr>
<tr>
<td>FIN 369</td>
<td>Finance, Real Estate and Insurance Internship</td>
<td></td>
</tr>
<tr>
<td>FIN 410</td>
<td>Life and Health Insurance</td>
<td></td>
</tr>
<tr>
<td>FIN 412</td>
<td>Property &amp; Liability Insurance Company Operations</td>
<td></td>
</tr>
<tr>
<td>FIN 433</td>
<td>Introduction to Futures and Options</td>
<td></td>
</tr>
<tr>
<td>FIN 441</td>
<td>Student Managed Investment Fund</td>
<td></td>
</tr>
<tr>
<td>FIN 454</td>
<td>Real Estate Investment Analysis</td>
<td></td>
</tr>
<tr>
<td>ACCT 422</td>
<td>Tax Research</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Free Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td>33</td>
</tr>
</tbody>
</table>

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

**Four-Year Plan - Real Estate - BSBA** ([http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbafinance/finance-realestate-bsba-fouryearplan](http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbafinance/finance-realestate-bsba-fouryearplan))

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Real Estate Major Course Work**

- FIN 319 Principles of Real Estate 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
- FIN 498 Selected Topics in Real Estate (Real Estate Management) 3

**Select two of the following Major Electives:**

- 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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 412</td>
<td>Property &amp; Liability Insurance Company Operations</td>
<td></td>
</tr>
<tr>
<td>FIN 431</td>
<td>Investments</td>
<td>3</td>
</tr>
<tr>
<td>FIN 432</td>
<td>Intermediate Financial Management</td>
<td></td>
</tr>
<tr>
<td>FIN 434</td>
<td>Management of Financial Institutions</td>
<td></td>
</tr>
<tr>
<td>FIN 441</td>
<td>Student Managed Investment Fund</td>
<td></td>
</tr>
<tr>
<td>FIN 497</td>
<td>Selected Topics in Finance</td>
<td></td>
</tr>
<tr>
<td>MKTG 404</td>
<td>Sales Management</td>
<td></td>
</tr>
<tr>
<td>MKTG 407</td>
<td>Marketing Research</td>
<td></td>
</tr>
<tr>
<td>MGMT 330</td>
<td>Organizational Behavior</td>
<td></td>
</tr>
<tr>
<td>CET 445</td>
<td>Construction Planning and Scheduling</td>
<td></td>
</tr>
<tr>
<td>CET 460</td>
<td>Construction Cost Estimating</td>
<td></td>
</tr>
<tr>
<td>CET 465</td>
<td>Construction Project Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Free Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td>33</td>
</tr>
</tbody>
</table>

* 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 435 International Financial Management 3
- FIN 450 Real Estate Finance 3
- FIN 451 Real Estate Appraisal 3
- FIN 454 Real Estate Investment Analysis 3
- FIN 498 Selected Topics in Real Estate (Real Estate Management) 3
- **Major Electives** 6

**Four-Year Plan - Risk Management and Insurance - BSBA** ([http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbafinance/finance-riskmgtandins-bsba-fouryearplan](http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbafinance/finance-riskmgtandins-bsba-fouryearplan))

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Risk Management and Insurance Major 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 Enterprise Risk Management 3
- **Major Electives** 12

Select three of the following

- 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 433  Introduction to Futures and Options

Select one of the following:
FIN 431  Investments
FIN 441  Student Managed Investment Fund
FIN 451  Real Estate Appraisal
FIN 497  Selected Topics in Finance

A minor in real estate requires the completion of:
FIN 319  Principles of Real Estate
FIN 450  Real Estate Finance
FIN 454  Real Estate Investment Analysis
FIN 498  Selected Topics in Real Estate (Real Estate Management)

Select one of the following:
FIN 319  Principles of Real Estate
FIN 450  Real Estate Finance
FIN 454  Real Estate Investment Analysis
FIN 498  Selected Topics in Real Estate (Real Estate Management)

A minor in risk management and insurance requires the completion of:
FIN 317  Principles of Insurance and Risk Management
FIN 413  Risk Analysis and Control
FIN 443  Enterprise Risk Management

Select two of the following:
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 441  Student Managed Investment Fund
FIN 451  Real Estate Appraisal
FIN 497  Selected Topics in Finance

Bachelor of Science in Business Administration - Information Systems and Technology

Ling Li, Chair
Weiyong Zhang, Assistant Chair
Roya Ardalan, Chief Discipline Advisor

The information systems and technology program 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. Four distinct concentrations are offered under the major.
**Information Systems and Technology course work**

<table>
<thead>
<tr>
<th>Required Core Courses:</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems (grade of C or better required as a prerequisite for upper-level IT courses)</td>
</tr>
<tr>
<td>IT 205</td>
<td>Introduction to Object-Oriented Programming</td>
</tr>
<tr>
<td>IT 315</td>
<td>Introduction to Networking and Security</td>
</tr>
<tr>
<td>IT 317</td>
<td>Enterprise Information Architecture (grade of C or better required as prerequisite for IT 464)</td>
</tr>
<tr>
<td>IT 363</td>
<td>Systems Analysis and Design</td>
</tr>
<tr>
<td>IT 450</td>
<td>Database Concepts</td>
</tr>
<tr>
<td>IT 464</td>
<td>Project Management in Information Systems</td>
</tr>
<tr>
<td>IT 474</td>
<td>Strategic IT Administration</td>
</tr>
</tbody>
</table>

Select two of the following IT Electives: 6

| IT 310 | Object-Oriented Programming with C++ |
| IT 325 | Web Site and Web Page Design |
| IT 367 | Cooperative Education |
| IT 368 | Student Internship |
| IT 369 | Practicum |
| IT 372 | COBOL and Applications |
| IT 374 | C# and Applications |
| IT 376 | PHP and Applications |
| IT 401 | Mobile and Cloud Computing |
| IT 408 | E-Business Portal Programming |
| IT 410 | Business Intelligence |
| IT 416 | Network Server Configuration and Administration |
| IT 417 | Management of Information Security |
| IT 418 | Information Assurance |
| IT 419 | Enterprise Cyber Defense |
| IT 420 | Object-Oriented Application Development Using Visual Basic |
| IT 425 | Information Systems for International Business |
| IT 430 | Object-Oriented Application Development with JAVA |
| IT 451 | Database Administration |
| IT 452 | Cloud Database |
| IT 453 | Advanced Database Concepts |
| IT 454 | Web-based Database Administration |
| IT 461 | Implementing Internet Applications |
| IT 494 | Entrepreneurship in Information Technology |
| IT 495 | Selected Topics in Information Systems |
| IT 497 | Independent Study in Information Systems |

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 |

One Business Elective at 300-400 Level ** 3

Total Hours 36

* IT 425 cannot be used as both the IT major elective and as the International Business 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.

All courses listed above except the International Business Elective and Business Elective are included in the calculation of the 2.00 overall grade point average required for major course work.

**Four-Year Plan - Information Systems and Technology - BSBA**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Information Systems and Technology, Database concentration course work**

<table>
<thead>
<tr>
<th>Required Core Courses:</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems (grade of C or better required as a prerequisite for upper-level IT courses)</td>
</tr>
<tr>
<td>IT 205</td>
<td>Introduction to Object-Oriented Programming</td>
</tr>
<tr>
<td>IT 315</td>
<td>Introduction to Networking and Security</td>
</tr>
<tr>
<td>IT 317</td>
<td>Enterprise Information Architecture (grade of C or better required as prerequisite for IT 464)</td>
</tr>
<tr>
<td>IT 363</td>
<td>Systems Analysis and Design</td>
</tr>
<tr>
<td>IT 450</td>
<td>Database Concepts</td>
</tr>
<tr>
<td>IT 464</td>
<td>Project Management in Information Systems</td>
</tr>
<tr>
<td>IT 474</td>
<td>Strategic IT Administration</td>
</tr>
</tbody>
</table>

Select two IT electives from the following: 6

| IT 451 | Database Administration |
| IT 452 | Cloud Database |
| IT 453 | Advanced Database Concepts |
| IT 454 | Web-based Database Administration |

Select one additional IT elective 3

International Business Elective: select one of the following. 3

| IT 425 | Information Systems for International Business |
| MSCM 370 | International Shipping |

Total Hours 36

**Four-Year Plan - Information Systems and Technology - Database - BSBA**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.
### Information Systems and Technology, Network Engineering concentration course work

**Required Core Courses**: 24 hours

- IT 201: Introduction to Information Systems (grade of C or better required as a prerequisite for upper-level IT courses)
- IT 205: Introduction to Object-Oriented Programming
- IT 315: Introduction to Networking and Security
- IT 317: Enterprise Information Architecture (grade of C or better required as prerequisite for IT 464)
- IT 363: Systems Analysis and Design
- IT 450: Database Concepts
- IT 464: Project Management in Information Systems
- IT 474: Strategic IT Administration

Select two IT electives from the list below: 6 hours

- IT 416: Network Server Configuration and Administration
- IT 417: Management of Information Security
- IT 419: Enterprise Cyber Defense

Select one additional IT elective (any IT 300-400 course): 3 hours

Select one of the following International Business Electives: 3 hours

- 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

**Total Hours**: 36

### Four-Year Plan - Information Systems and Technology - Network Engineering - BSBA

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Information Systems and Technology, Application Development concentration course work

**Required Core Courses**: 24 hours

- IT 201: Introduction to Information Systems (grade of C or better required as a prerequisite for upper-level IT courses)
- IT 205: Introduction to Object-Oriented Programming
- IT 315: Introduction to Networking and Security
- IT 317: Enterprise Information Architecture (grade of C or better required as prerequisite for IT 464)
- IT 363: Systems Analysis and Design
- IT 461: Implementing Internet Applications
- IT 420: Object-Oriented Application Development Using Visual Basic
- IT 430: Object-Oriented Application Development with JAVA

**Total Hours**: 36

### Four-Year Plan - Information Systems and Technology - E-Business and E-Commerce - BSBA

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Information Systems and Technology, E-Business and E-Commerce concentration course work

**Required Core Courses**: 24 hours

- IT 201: Introduction to Information Systems (grade of C or better required as a prerequisite for upper-level IT courses)
- IT 205: Introduction to Object-Oriented Programming
- IT 315: Introduction to Networking and Security
- IT 317: Enterprise Information Architecture (grade of C or better required as prerequisite for IT 464)
- IT 363: Systems Analysis and Design
- IT 416: Implementing Internet Applications
- IT 425: Information Systems for International Business
- IT 461: Implementing Internet Applications
- IT 463: International Shipping

**Additional Required Course**: 3 hours

- IT 310: Object-Oriented Programming with C++
- IT 325: Web Site and Web Page Design
- IT 372: COBOL and Applications
- IT 374: C# and Applications
- IT 376: PHP and Applications
- IT 420: Object-Oriented Application Development Using Visual Basic
- IT 430: Object-Oriented Application Development with JAVA

**Total Hours**: 36

Old Dominion University 194
Select one of the following Software Electives: 3
IT 401 Mobile and Cloud Computing
IT 408 E-Business Portal Programming
IT 410 Business Intelligence
IT 452 Cloud Database
IT 453 Advanced Database Concepts
IT 454 Web-based Database Administration

Select one of the following International Business Electives: 3
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

Total Hours 36

Four-Year Plan - Information Systems and Technology - Application Development - BSBA (http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbainfosystems/infosysandtech-applicationdev-bsbafouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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 363 Systems Analysis and Design 3
IT 450 Database Concepts 3

Select six credit hours from the following: 6
IT 310 Object-Oriented Programming with C++
IT 315 Introduction to Networking and Security **
IT 325 Web Site and Web Page Design
IT 367 Cooperative Education ***
IT 368 Student Internship ***
IT 369 Practicum ***
IT 372 COBOL and Applications
IT 374 C# and Applications
IT 376 PHP and Applications
IT 401 Mobile and Cloud Computing
IT 408 E-Business Portal Programming
IT 410 Business Intelligence
IT 420 Object-Oriented Application Development Using Visual Basic

IT 425 Information Systems for International Business
IT 430 Object-Oriented Application Development with JAVA
IT 451 Database Administration
IT 452 Cloud Database
IT 453 Advanced Database Concepts
IT 461 Implementing Internet Applications
IT 464 Project Management in Information Systems
IT 474 Strategic IT Administration
IT 494 Entrepreneurship in Information Technology
IT 495 Selected Topics in Information Systems

Total Hours 12

* Students completing CS 450 must substitute another course for IT 450 from the elective list.
** Computer Engineering and Computer Engineering Technology students completing CS 450 must substitute another course for IT 315 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.

BSBA in Information Systems and Technology - Enterprise Cybersecurity

Bachelor of Science in Business Administration in Information Systems and Technology - Enterprise Cybersecurity

Ling Li, Chair
Weiyong Zhang, Assistant Chair
Roya Ardalan, Chief Discipline Advisor

The enterprise cybersecurity major is designed to provide students with a technical background in cybersecurity technology as well as a broad perspective of the business environment in which cybersecurity plays a critical role. The major emphasizes programming, business analysis, networking, enterprise architecture and cyber defense skills; these skills can provide a basis for job entry, career development and flexibility amid the rapid changes in cybersecurity vulnerabilities and threats.

Enterprise Cybersecurity course work

Required Core Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 201</td>
<td>Introduction to Information Systems (Grade of C or better required as a prerequisite for upper-level courses)</td>
</tr>
<tr>
<td>IT 205</td>
<td>Introduction to Object-Oriented Programming</td>
</tr>
<tr>
<td>IT 315</td>
<td>Introduction to Networking and Security (Grade of C or better required as prerequisite for IT 416)</td>
</tr>
<tr>
<td>IT 317</td>
<td>Enterprise Information Architecture (grade of C or better required as prerequisite for IT 464)</td>
</tr>
<tr>
<td>IT 363</td>
<td>Systems Analysis and Design</td>
</tr>
</tbody>
</table>
Old Dominion does not offer all the required courses for this language, a language other than French, Spanish, German, Chinese or Japanese. If students will study and obtain a high level of competency in a foreign language, they must take the equivalent courses for Europe and Latin America concentration areas at another university. 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, East Asian concentration**

**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

- GEOG 453 Asia
- 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
**Four-Year Plan-International Business - East Asia-China-BSBA**
(http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsba/intlbusiness-intlbusiness-china-bsba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**International Business, East Asian concentration in Japanese course work**

- **HIST 101H** Interpreting the Asian Past 3
- **POL 100S** Introduction to International Politics 3
- **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
- **GEOG 453** Asia
- **HIST 336** The Emergence of New China
- **HIST 439** Politics and Society in East Asia Since 1945
- **POL 338W** Politics of East Asia
- **POL 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

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**Four-Year Plan-International Business - East Asia-Japan-BSBA**
(http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsba/intlbusiness-intlbusiness-japan-bsba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**International Business, European concentration course work**

- **HIST 102H** Interpreting the European Past 3
- **POL 100S** Introduction to International Politics 3
- **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
- **HIST 316** Cold War in History
- **POL 314** European Politics
- **POL 332W** Europe in World Affairs
- **WCS 410** Berlin-Paris: Crucibles of European Ideas

**Total Hours** 42

* 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, provided 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

---

197 Bachelor of Science in Business Administration - International Business
### Four-Year Plan - International Business - European - BSBA

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**International Business, Latin American concentration course work**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 103H</td>
<td>Interpreting the Latin America Past</td>
<td>3</td>
</tr>
<tr>
<td>POLS 100S</td>
<td>Introduction to International Politics</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 201</td>
<td>Intermediate Spanish I</td>
<td>3</td>
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<tr>
<td>SPAN 202</td>
<td>Intermediate Spanish II</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 366</td>
<td>Business Spanish: Language and Culture</td>
<td>3</td>
</tr>
<tr>
<td>ECON 450</td>
<td>International Economics</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 411</td>
<td>Multi-National Marketing</td>
<td>3</td>
</tr>
<tr>
<td>INBU 432</td>
<td>Doing Business in Latin America</td>
<td>3</td>
</tr>
<tr>
<td>INBU 450</td>
<td>Global Business</td>
<td>3</td>
</tr>
</tbody>
</table>

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 435 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

Select two of the following International Latin America Regional Courses: 6

- GEOG 454W Latin America
- HIST 373 U.S.-Latin American Relations
- HIST 470 Struggle for Democracy and Development in 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 42

*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

### Four-Year Plan - International Business - Latin America - BSBA

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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

Anil Nair, Chair
Karen Eagle, Faculty Advisor and Entrepreneurship Area Coordinator
Jennifer Klinger, Faculty Advisor

A management major is appropriate for those interested in careers in different types of organizations (e.g., for profits/non-profits), working in Human Resource Management/Management Consulting or launching a business. The program recognizes that most graduates will face several career changes and job choices; thus, the management major is designed to develop a student’s understanding of the principles and practice of management in a global economy. The department offers a variety of courses that should give students an opportunity to pursue their interests and focus in areas such as Human Resource Management, General Management or Entrepreneurship.

For a major in management, all courses must be preceded by listed prerequisites. For completion of the 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 course work**

- MGMT 330 Organizational Behavior 3
- MGMT 340 Human Resources Management 3
- MGMT 361 International Business Operations 3
A Minor in Management requires the completion of 19 credits. Preferably, graduates will be able to recruit graduates with leadership, communication, entrepreneurial, and "soft skills." Surveys of employers have frequently found they prefer to recruit graduates with leadership, communication, entrepreneurial, and "soft skills." A management minor is suitable for students who want to complement their major with "soft skills." Surveys of employers have frequently found they prefer to recruit graduates with leadership, communication, entrepreneurial, and strategic thinking skills.

**Management Minor**

A management minor is suitable for students who want to complement their major with "soft skills." Surveys of employers have frequently found they prefer to recruit graduates with leadership, communication, entrepreneurial, and strategic thinking skills.

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.

**Certificate in Entrepreneurship**

The certificate in entrepreneurship offers a focus on business creation in a variety of fields. Students will be provided with tools that support the establishment of new ventures, including resource management, analytical processes, and other factors that contribute to the development of new organizations. Students will be required to complete a foundational course that will introduce them to the concepts and practical work required in entrepreneurial ventures. They will also complete a capstone course that covers the creation, structure and management of new organizations. Students will also complete two courses from areas that align with their major or new business interest. Students who complete the certificate will be able to take ideas and mold them into the foundation of a new business, regardless of career selection. They will also gain a heightened understanding of critical thinking in support of establishing new ventures.

An overall grade point average of 2.0 or above in all courses specified as a requirement for the certificate is required for the award of the certificate.

### Curriculum Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTR 201S</td>
<td>Introduction to Entrepreneurship</td>
<td>3</td>
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<tr>
<td>ACCT 300</td>
<td>Accounting for Entrepreneurs</td>
<td></td>
</tr>
<tr>
<td>CHP 440</td>
<td>Finance and Budgeting in Healthcare</td>
<td></td>
</tr>
<tr>
<td>COMM 305</td>
<td>Professional Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 351</td>
<td>Interpersonal Communication in Organizations</td>
<td></td>
</tr>
<tr>
<td>DNTH 416</td>
<td>Administrative Leadership and Professional Development</td>
<td></td>
</tr>
<tr>
<td>ENMA 401</td>
<td>Project Management</td>
<td></td>
</tr>
<tr>
<td>ENMA 421</td>
<td>Decision Techniques in Engineering</td>
<td></td>
</tr>
<tr>
<td>FIN 323</td>
<td>Introductory Financial Management</td>
<td></td>
</tr>
<tr>
<td>HLTH 425</td>
<td>Leadership and Management for Health Professionals</td>
<td></td>
</tr>
<tr>
<td>HNRS 301</td>
<td>Monarch Think Tank II</td>
<td></td>
</tr>
<tr>
<td>MGMT 340</td>
<td>Human Resources Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 420</td>
<td>Business Development</td>
<td></td>
</tr>
<tr>
<td>MGMT 452</td>
<td>Negotiations and Change Management</td>
<td></td>
</tr>
<tr>
<td>MKTG 311</td>
<td>Marketing Principles and Problems</td>
<td></td>
</tr>
<tr>
<td>MKTG 416</td>
<td>Professional Selling</td>
<td></td>
</tr>
<tr>
<td>MKTG 450</td>
<td>Marketing on the Internet</td>
<td></td>
</tr>
<tr>
<td>PRTS 441</td>
<td>Marketing of Hospitality Services</td>
<td></td>
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<tr>
<td>PSYC 344</td>
<td>Human Factors</td>
<td></td>
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<tr>
<td>SMGT 414</td>
<td>Sport Marketing</td>
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<td>MGMT 426</td>
<td>Entrepreneurship: New Ventures Creation</td>
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<td>MGMT 495</td>
<td>Selected Topics in Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 498</td>
<td>Capstone:</td>
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<tr>
<td>MGMT 499</td>
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<td>3</td>
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<tr>
<td>Total Hours</td>
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</tbody>
</table>

* A grade of C- or better is required in all management courses counted toward the major.

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.

### Four-Year Plan - Management Major - BSBA [http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbmanagement/management-bsba-fouryearplan]

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Management Minor

A management minor is suitable for students who want to complement their major with "soft skills." Surveys of employers have frequently found they prefer to recruit graduates with leadership, communication, entrepreneurial, and strategic thinking skills.

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.

### Certificate in Entrepreneurship

The certificate in entrepreneurship offers a focus on business creation in a variety of fields. Students will be provided with tools that support the establishment of new ventures, including resource management, analytical processes, and other factors that contribute to the development of new organizations. Students will be required to complete a foundational course that will introduce them to the concepts and practical work required in entrepreneurial ventures. They will also complete a capstone course that covers the creation, structure and management of new organizations. Students will also complete two courses from areas that align with their major or new business interest. Students who complete the certificate will be able to take ideas and mold them into the foundation of a new business, regardless of career selection. They will also gain a heightened understanding of critical thinking in support of establishing new ventures.

An overall grade point average of 2.0 or above in all courses specified as a requirement for the certificate is required for the award of the certificate.

### Bachelor of Science in Business Administration - Maritime and Supply Chain Management

**Ling Li, Chair and Area Coordinator**  
**Weiyong Zhang, Assistant Chair**  
**Ricardo Ungo, Chief Discipline Advisor**

The maritime and supply chain management program 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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCM 370</td>
<td>International Shipping</td>
<td>3</td>
</tr>
<tr>
<td>MSCM/BNAL 441</td>
<td>Supply Chain Management and Logistics</td>
<td>3</td>
</tr>
<tr>
<td>MSCM 471</td>
<td>Shipping Management</td>
<td>3</td>
</tr>
<tr>
<td>MSCM 472</td>
<td>Port Management</td>
<td>3</td>
</tr>
<tr>
<td>MSCM 473</td>
<td>Inland Waterway and Intermodal Transportation</td>
<td>3</td>
</tr>
<tr>
<td>Select three of the following Major Electives:</td>
<td>9</td>
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</tr>
<tr>
<td>MSCM 368</td>
<td>Maritime and Supply Chain Internship</td>
<td></td>
</tr>
<tr>
<td>Total credit hours</td>
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<td>12</td>
</tr>
</tbody>
</table>
### MSCM 415  Maritime Security and Risk Analysis
### MSCM 430  Strategic Sourcing and Purchasing Management
### MSCM 439  Quality Management
### MSCM 468  Distribution Center and Material Handling Management
### MSCM 495  Topics in Maritime and Supply Chain Management
### MSCM 497  Independent Study
### ECON 402  Transportation Economics
### BNAL 406  Advanced Spreadsheet-Based Data Analytics
### BNAL 407  Prescriptive Analytics of Management Science
### BNAL 432  Predictive Analytics for Business
### 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
### MKTG 405  The Art of Influence and Persuasion
### MKTG 416  Professional Selling
### 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

### Supply Chain Management Concentration Coursework

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCM 370</td>
<td>International Shipping</td>
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<td>MSCM/BNAL 441</td>
<td>Supply Chain Management and Logistics</td>
<td>3</td>
</tr>
<tr>
<td>MSCM 430</td>
<td>Strategic Sourcing and Purchasing Management</td>
<td>3</td>
</tr>
<tr>
<td>MSCM 439</td>
<td>Quality Management</td>
<td>3</td>
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<tr>
<td>MSCM 468</td>
<td>Distribution Center and Material Handling Management</td>
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</table>

Select three of the following Major Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MSCM 471</td>
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<td>MSCM 472</td>
<td>Port Management</td>
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<td>MSCM 473</td>
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<td>BNAL 406</td>
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### Free Electives

<table>
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<tr>
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</table>

### 300-400 Level Business Elective *

<table>
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<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>6</td>
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</tbody>
</table>

Total Hours 33

* Can be any 300-400 level course offered by the Strome College of Business, provided that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for supply chain management concentration coursework for graduation are:

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<tr>
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<th>Course Title</th>
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</tr>
</thead>
<tbody>
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<td>3</td>
</tr>
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<td>MSCM/BNAL 441</td>
<td>Supply Chain Management and Logistics</td>
<td>3</td>
</tr>
<tr>
<td>MSCM 430</td>
<td>Strategic Sourcing and Purchasing Management</td>
<td>3</td>
</tr>
<tr>
<td>MSCM 439</td>
<td>Quality Management</td>
<td>3</td>
</tr>
<tr>
<td>MSCM 468</td>
<td>Distribution Center and Material Handling Management</td>
<td>3</td>
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</table>

### Free Electives

<table>
<thead>
<tr>
<th>Hours</th>
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<tr>
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</table>

### 300-400 Level Business Electives *

<table>
<thead>
<tr>
<th>Hours</th>
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<tbody>
<tr>
<td>6</td>
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</table>

Total Hours 33

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<td>Quality Management</td>
<td>3</td>
</tr>
<tr>
<td>MSCM 468</td>
<td>Distribution Center and Material Handling Management</td>
<td>3</td>
</tr>
</tbody>
</table>

All 300-400 level MSCM/BNAL/OPMT elective courses

---

### Four-Year Plan - Maritime Management Concentration - BSBA

(http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbamaritimesupplychainmgmt/maritimemgmt-bsba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.
Four-Year Plan - Supply Chain Management Concentration - BSBA (http://catalog.odu.edu/undergraduate/stromecollegeofbusiness/bsbamaritimesupplychaintmgmt/supplychainmgmt-bsba-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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 ** 3

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

Total Hours 12

Prerequisite Courses
* BNAL 206 or STAT 130M or equivalent
** OPMT 303
*** MSCM 370
**** ACCT 202, BNAL 206, OPMT 303

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

Web Site: http://www.odu.edu/business/departments/mktgdept

Mahesh Gopinath, Chair
Michelle Carpenter, Chief Departmental Advisor

From building iconic brands to understanding why people buy what they buy, marketing is the exciting interface between companies and their customers and other stakeholders. It builds valuable relationships for companies and makes them more competitive in the marketplace. The marketing program teaches students marketing, communication, and analytical knowledge and prepares students for high-demand marketing career opportunities in today's and tomorrow's global environment.

The marketing program offers a general marketing concentration and three distinctive career-oriented concentrations:

1. Digital marketing concentration, which equips graduates with the knowledge base and skill set to leverage digital marketing platforms such as social media and search engines;
2. Marketing analytics and research concentration, which produces graduates for fast-growing career opportunities in the field of deriving deep customer insight and effective marketing strategy from data; also suitable for students interested in pursuing a graduate degree in marketing or related areas;
3. Professional sales concentration, which prepares graduates for a successful career in business-to-business sales.

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 - Digital Marketing Concentration Course Work*

MKTG 402 Consumer Behavior 3
MKTG 407 Marketing Research 3
MKTG 411 Multi-National Marketing 3
MKTG 450 Marketing on the Internet 3
MKTG 455 Social Media Marketing 3
MKTG 460 Web Analytics 3
MKTG 490 Marketing Policy and Strategy 3

Select one from the following:

IT 325 Web Site and Web Page Design 3
MKTG 367 Cooperative Education
MKTG 368 Marketing Internship
MKTG 369 Practicum
MKTG 406 Public Relations
MKTG 412 Retail Marketing
MKTG 496 Selected Topics in Marketing

200-400 Level Free Elective 3
Free Electives 6
Total Hours 33

* A grade of C- or better is required in all marketing courses counted toward the major.

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 - Marketing Analytics and Research Concentration Course Work*

MKTG 402 Consumer Behavior 3
MKTG 407 Marketing Research 3
MKTG 411 Multi-National Marketing 3
MKTG 460 Web Analytics 3
MKTG 475 Marketing Analytics 3
MKTG 490 Marketing Policy and Strategy 3
BNAL 406 Advanced Spreadsheet-Based Data Analytics 3

Select one from the following:

IT 450 Database Concepts 3
BNAL 415 Advanced Business Analytics/Big Data Applications 3
Marketing Internship
Marketing Internship
Practicum
Selected Topics in Marketing
Research Methods in Psychology
200-400 Level Free Elective
Free Electives
Total Hours

* A grade of C- or better is required in all marketing courses counted toward the major.

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 - Professional Sales Course Work*

MKTG 402 Consumer Behavior
MKTG 404 Sales Management
MKTG 405 The Art of Influence and Persuasion
MKTG 407 Marketing Research
MKTG 411 Multi-National Marketing
MKTG 416 Professional Selling
MKTG 490 Marketing Policy and Strategy

Select one from the following:

MKTG 367 Cooperative Education
MKTG 368 Marketing Internship
MKTG 369 Practicum
MKTG 428 Marketing of Services
MKTG 475 Marketing Analytics
MKTG 496 Selected Topics in Marketing

200-400 Level Free Elective
Free Electives
Total Hours

* A grade of C- or better is required in all marketing courses counted toward the major.

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 - General Concentration Course Work*

MKTG 402 Consumer Behavior
MKTG 407 Marketing Research
MKTG 411 Multi-National Marketing
MKTG 490 Marketing Policy and Strategy

Select four from the following:

MKTG 367 Cooperative Education
MKTG 368 Marketing Internship
MKTG 369 Practicum
MKTG 403 Advertising Strategy
MKTG 404 Sales Management
MKTG 405 The Art of Influence and Persuasion
MKTG 406 Public Relations
MKTG 412 Retail Marketing
MKTG 414 Ethics and Social Issues in Administration
MKTG 416 Professional Selling
MKTG 428 Marketing of Services
MKTG 450 Marketing on the Internet
MKTG 455 Social Media Marketing

Four-Year Plan - Marketing, General Concentration - BSBA

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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)

Web Site: http://www.goarmy.com/rotc/schools/old-dominion-university.html
Rhana Kurdi, 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**

<table>
<thead>
<tr>
<th>Military Science Level I</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSL 101+ Introduction to ROTC</td>
<td></td>
</tr>
<tr>
<td>MSL 102+ Introduction to Leadership</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>MSL 195 Independent Study of Selected Military Topics</td>
<td></td>
</tr>
<tr>
<td>MSL 196 Independent Study of Selected Military Topics</td>
<td></td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Military Science Level III</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSL 301 Advanced Leadership Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSL 395 Independent Study</td>
<td>3</td>
</tr>
<tr>
<td>or MSL 311+ Advanced Leadership Skills III Lab</td>
<td></td>
</tr>
<tr>
<td>MSL 302 Applied Leadership</td>
<td>3</td>
</tr>
<tr>
<td>MSL 396 Independent Study</td>
<td>3</td>
</tr>
<tr>
<td>or MSL 312+ Applied Leadership Lab</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Military Science Level IV</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSL 401 Military Leadership and Management</td>
<td></td>
</tr>
<tr>
<td>MSL 495 Independent Study</td>
<td></td>
</tr>
<tr>
<td>or MSL 411+ Senior Military Leadership and Management Laboratory</td>
<td></td>
</tr>
<tr>
<td>MSL 402 Officership</td>
<td></td>
</tr>
<tr>
<td>MSL 496 Independent Study</td>
<td></td>
</tr>
<tr>
<td>or MSL 412+ Senior Leadership Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Military Science Level IV</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MSL 301 Advanced Leadership Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSL 302 Applied Leadership</td>
<td>3</td>
</tr>
<tr>
<td>MSL 401 Military Leadership and Management</td>
<td>3</td>
</tr>
<tr>
<td>MSL 402 Officership</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENMA 301 Introduction to Engineering Management</td>
<td></td>
</tr>
<tr>
<td>ENMA 401 Project Management</td>
<td></td>
</tr>
<tr>
<td>ENGL 435W Management Writing</td>
<td></td>
</tr>
<tr>
<td>HIST 360 American Military History</td>
<td></td>
</tr>
<tr>
<td>HIST 408 War and American Society in the Twentieth Century</td>
<td></td>
</tr>
<tr>
<td>MGMT 325 Contemporary Organizations and Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 340 Human Resources Management</td>
<td></td>
</tr>
<tr>
<td>NURS 480W Nursing in the Health Care System: Leadership</td>
<td></td>
</tr>
<tr>
<td>PHIL 441 Foundations of Ethics</td>
<td></td>
</tr>
<tr>
<td>PHIL 442E Studies in Applied Ethics</td>
<td></td>
</tr>
<tr>
<td>POLS 326W American Foreign Policy</td>
<td></td>
</tr>
<tr>
<td>POLS 327W Politics of National Security</td>
<td></td>
</tr>
<tr>
<td>POLS 350T Technology and War</td>
<td></td>
</tr>
<tr>
<td>POLS 421 International Law</td>
<td></td>
</tr>
<tr>
<td>PSYC 343 Personnel Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 345 Organizational Psychology</td>
<td></td>
</tr>
<tr>
<td>SOC 352 War and Peace</td>
<td></td>
</tr>
</tbody>
</table>

**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 and Professional Studies

Web Site: http://www.odu.edu/education

Jane S. Bray, Dean
Gail Dickinson, Associate Dean, Graduate Programs and Research
Tammi F. Dice, Associate Dean, Undergraduate Education
Maggie Barber, Interim Associate Dean, Educator Preparation

The Darden College of Education and Professional Studies is comprised of the following departments: Communication Disorders and Special Education; Counseling and Human Services; Educational Foundations and Leadership; Human Movement Sciences; Science, Technology, Engineering and Mathematics (STEM) Education and Professional Studies; and Teaching and Learning.

Mission
To advance our communities through research, teaching and service activities that reflect our commitment to excellence, innovation and transformation.

Vision
The Darden College of Education and Professional Studies is dedicated to continually improving the lives of our communities - those groups of people linked by diverse needs, affiliation, or purpose-through culturally-affirming research, teaching, and service. The College will be a premier leader in preparing individuals for professions in education, industry, service and clinical environments.

Undergraduate Degree Programs
The Darden College of Education and Professional Studies offers the following Bachelor’s degrees by department:

Communication Disorders and Special Education Department
- B.S. in Speech Language Pathology and Audiology
- B.S. in Special Education-General Curriculum

Counseling and Human Services Department
- B.S. in Human Services

Human Movement Sciences Department
- B.S. in Exercise Science*
- B.S. in Park, Recreation and Tourism Studies
  - Park and Recreation Management
  - Therapeutic Recreation
  - Tourism Management
- B.S. in Physical Education
  - Health & Physical Education Prek-12 Teacher Preparation
- B.S. in Sport Management

Science, Technology, Engineering, Mathematics (STEM) Education and Professional Studies Department
- B.S. in Occupational and Technical Studies
  - Fashion Merchandising
  - Industrial Technology
  - Training Specialist
- B.S. in Career and Technical Education

Marketing Education
- Technology Education

Teaching and Learning Department
- B.S. in Early Childhood Education PK-3
- B.S. in Elementary Education PK-6

*Pending approval by the State Council of Higher Education for Virginia

Career and Advising Resource Center
https://www.odu.edu/eps/advising/undergraduate
1107 Education Building (757) 683-4789
Trey Mayo, Director of Advising
Rob Batchelder, Academic Advisor and Business Manager
Joe Hassell, Academic Advisor
Nola Nicholson, Academic Advisor

The Career and Advising Resource Center (CARC) provides career and academic advising services for students in the Darden College of Education and Professional Studies. Students who visit CARC are encouraged to plan for their academic program and investigate career opportunities through exploration and engagement with an academic advisor. CARC provides students access to university resources including Career Development Services and Student Engagement and Enrollment Services. CARC advisors believe in a collaborative partnership to maximize the potential of each student, and are available to answer any questions as students discover their academic and career plans.

Office of Clinical Experiences
https://www.odu.edu/oce
2345 Education Building (757) 683-3348
Jody Sommerfeldt, Director

The Office of Clinical Experiences is committed to effectively and efficiently supporting all students in the Darden College of Education and Professional Studies who engage in field experiences. The services provided assist in preparing students for their professions in education, industry, service and clinical environments.

B.S. to M.B.A. (Master of Business Administration) Linked Program
The linked BS/MBA program is an early entry to the MBA program of study. The early-entry program is designed for well qualified non-business undergraduate ODU students to start their MBA program prior to completing their undergraduate degree. Well qualified non-business undergraduate students may take MBA-level courses as early as three semesters prior to graduation and count up to 12 graduate credits toward their undergraduate degree. Students participating in the early-entry program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Early-entry program students should carefully consider their undergraduate degree program requirements when planning their course of study. Students in the early-entry program work in close consultation with the MBA Program Office to develop an individualized plan of study based on the required coursework outlined 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)
Students who have done exceptionally well in their undergraduate work may qualify for a GMAT waiver. These candidates will have:

1. Completed all lower-level general education requirements
2. Completed at least 24 credit hours at ODU with a cumulative GPA of at least 3.5
3. Achieved junior standing

Admissions Procedure

Students interested in the early-entry program should complete the GMAT at least two semesters prior to the semester in which they wish to enroll. Applications to the MBA program must be submitted online following published deadlines in order to begin coursework in the desired semester. When completing the application for admission, students need to select an official admission date that is the semester immediately following their anticipated undergraduate graduation.

Students interested in the program should contact the MBA Program Office as early as possible to discuss their plans for early entry. Once admitted to the program, the MBA program manager will act as the student’s co-advisor, along with the chief departmental advisor or chief discipline advisor in the student's undergraduate major. The MBA Program Office is located in 1026 Constant Hall. The phone number is 757-683-3585 and email is mbainfo@odu.edu.

Requirements for the M.B.A.

Admitted students may begin to complete courses from the MBA pre-core and/or core as soon as three semesters prior to anticipated undergraduate graduation. Twelve graduate credit hours can count toward the undergraduate degree and can meet upper-level General Education requirements. Students will work closely with their undergraduate advisor to confirm what MBA coursework can be used for the fulfillment of their undergraduate degree requirements.

The entire program for a general MBA is 45 credit hours for non-business majors. Courses will be available online and on main campus except for the pre-core, which is only offered online. Those students required to complete the pre-core must complete all pre-core requirements before being allowed to progress to any core courses.

Students must satisfactorily complete:

**MBA Pre-Core**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA 600</td>
<td>Introduction to Statistics</td>
<td>1</td>
</tr>
<tr>
<td>MBA 601</td>
<td>Introduction to Managerial Economics</td>
<td>1</td>
</tr>
<tr>
<td>MBA 602</td>
<td>Introduction to Finance</td>
<td>1</td>
</tr>
<tr>
<td>MBA 603</td>
<td>Introduction to Accounting</td>
<td>1</td>
</tr>
<tr>
<td>MBA 604</td>
<td>Introduction to Information Management</td>
<td>1</td>
</tr>
</tbody>
</table>

**MBA Core**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 609</td>
<td>Managerial Accounting</td>
<td>2</td>
</tr>
<tr>
<td>ACCT 611</td>
<td>Financial Accounting</td>
<td>2</td>
</tr>
<tr>
<td>BNAL 606</td>
<td>Statistics for Managers</td>
<td>2</td>
</tr>
<tr>
<td>BNAL 610</td>
<td>Fundamentals of Business Analytics</td>
<td>2</td>
</tr>
<tr>
<td>ECON 607</td>
<td>Managerial Economics</td>
<td>2</td>
</tr>
<tr>
<td>ECON 618</td>
<td>Global Macroeconomics</td>
<td>2</td>
</tr>
<tr>
<td>FIN 613</td>
<td>Financial Management</td>
<td>2</td>
</tr>
<tr>
<td>FIN 616</td>
<td>Investments and Portfolio Management</td>
<td>2</td>
</tr>
<tr>
<td>FIN 619</td>
<td>Business Law and Ethics</td>
<td>2</td>
</tr>
<tr>
<td>INBU 620</td>
<td>International Business Issues</td>
<td>2</td>
</tr>
<tr>
<td>IT 614</td>
<td>Information and Knowledge Management</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 605</td>
<td>Leadership Dynamics</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 612</td>
<td>Managing in Contemporary Organizations</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 621</td>
<td>Strategic Management</td>
<td>4</td>
</tr>
<tr>
<td>MKTG 608</td>
<td>Fundamentals of Contemporary Marketing</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 617</td>
<td>Marketing Strategy</td>
<td>2</td>
</tr>
<tr>
<td>OPMT 615</td>
<td>Operations &amp; Supply Chain Management</td>
<td>2</td>
</tr>
</tbody>
</table>

Elevect Credit Hours

Total Hours 45

* Each core course is offered once per academic year in a specific semester both online and on-campus to maximize opportunity for degree completion, subject to sufficient demand.

Graduate Writing Proficiency

Students in the MBA program are required to meet the Old Dominion University writing requirement. This can be achieved in one of two ways: (1) earn a raw score of 4.5 or above on the Analytical Writing portion of the GMAT/GRE or (2) successfully complete MBA 621: Effective Business Writing.

Continuance Policy

To remain in good academic standing after admission to the program, students must maintain a minimum cumulative grade point average of 3.0 in all graduate coursework attempted at the University. Students who fall below this minimum standard will have 12 credit hours to remedy this deficiency.

Further, students may be removed from the program when they earn (1) a grade of C or lower in two courses in the pre-core, or (2) a grade of C or lower in two courses in the core and elective coursework, or (3) a failing grade (F) in any course.

B.S. to M.P.A. (Master of Public Administration) Linked Program

The linked B.S./M.P.A. program provides qualified Old Dominion University undergraduate students with the opportunity to earn a master’s degree in public administration while taking credits in the M.P.A. program as an undergraduate student. The program is designed for highly motivated students with the desire to immediately continue their education after the bachelor's degree. The program is especially relevant to individuals seeking to work (or currently working) in the public or non-profit sectors, but is suitable for students from any undergraduate major. Graduate courses may be taken during the fall and spring semester of the student’s senior undergraduate year. Up to 12 graduate credits can count toward both the undergraduate and graduate degree and can meet upper-level General Education requirements. After receiving the undergraduate degree, a student will continue with the M.P.A. program, taking M.P.A. courses until completing the required 39 credit hours. Students in the linked program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree).

Admission Requirements

A potential candidate will have:

1. Completed all lower level general education requirements
2. Achieved a cumulative GPA of at least 3.0 at the end of the junior year

Requirements for admission to the graduate program can be found in the School of Public Service section of the Graduate Catalog. For additional information, please contact the School of Public Service in the Strome College of Business.

Communication Disorders and Special Education

Web Site: [http://www.odu.edu/cdse](http://www.odu.edu/cdse)

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. Two undergraduate degrees are offered in the department: B.S. in Speech-Language Pathology and Audiology; and B.S. in Special Education.

**Bachelor of Science—Speech-Language Pathology and Audiology**

Stacie Raymer, Undergraduate Program Director

The undergraduate program in speech-language pathology and audiology is designed to provide students with the academic experiences needed to understand normal processes involved in speech, language, and hearing abilities, identify communication disorders, and introduce students to clinical procedures for assessment and treatment of communication disorders. The minimum number of hours required for the degree is 120 credits. 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 for students to apply to a master's degree program in speech-language pathology that prepares students for licensure and employment through advanced course work and clinical practica. The undergraduate degree also prepares students to apply to graduate audiology programs that are offered at other universities and other professional graduate programs.

**Admission, Continuance and Exit Requirements**

**Admission**

Requirements are as follows:

1. Students must have completed one year of course work with a grade point average of at least 2.50
2. 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 re-taken 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication Skills *</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematical Skills (STAT 130M recommended)</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science **</td>
<td>8</td>
</tr>
<tr>
<td>Biology for Nonscience Majors I</td>
<td></td>
</tr>
<tr>
<td>Biology for Nonscience Majors II</td>
<td></td>
</tr>
<tr>
<td>Environmental Sciences</td>
<td></td>
</tr>
<tr>
<td>and Environmental Sciences Lab</td>
<td></td>
</tr>
<tr>
<td>Introduction to Human Biology</td>
<td></td>
</tr>
<tr>
<td>and Introduction to Human Biology Lab</td>
<td></td>
</tr>
<tr>
<td>General Biology I</td>
<td></td>
</tr>
<tr>
<td>and General Biology I Lab</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

- **CHEM 105N** Introductory Chemistry
- **CHEM 106N** and Introductory Chemistry Laboratory
- **CHEM 121N** Foundations of Chemistry I Lecture
- **CHEM 122N** and Foundations of Chemistry I Laboratory
- **PHYS 101N** Conceptual Physics
- **PHYS 111N** Introductory General Physics
- **PHYS 231N** University Physics I

**Human Behavior *** 3-6**

**Impact of Technology**

3

**Total Hours**

41-50

* C or better required in both courses.

** To meet national accreditation requirements, students must complete one course in biological sciences and one course in either chemistry or physics.

*** To meet national accreditation requirements, students must complete 6 credit hours of human behavior coursework, preferably PSYC 201S and SOC 201S.

**Major Courses**

- **CSD 350** Survey in Communication Disorders (Fall, Spring) 3
- **CSD 351** Anatomy of Speech, Language, and Swallowing (Fall only) 3
- **CSD 352** Phonetics (Spring only) 3
- **CSD 447** Introduction to Language Disorders in Children (Fall, Spring) 3
- **CSD 449W** Disciplinary Writing in Speech-Language Pathology (Fall, Spring) 3
- **CSD 451** Articulation and Phonological Disorders (Fall, Summer) 3
- **CSD 452** Voice and Fluency Disorders (Fall, Summer) 3
- **CSD 453** Language Development (Fall, Spring) 3
- **CSD 458** Speech and Hearing Science (Spring only) 3
- **CSD 459** Methods and Materials in Speech-Language Pathology (Spring, Summer) 3
- **CSD 460** Hearing Disorders and Basic Audiometry (Fall, Summer) 3
- **CSD 461** Aural Rehabilitation I (Spring only) 3
- **CSD 465** Sign Language and Deaf Culture I (Fall, Spring) 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 411** Classroom and Behavioral Management Techniques for Students with Diverse Needs 3
- **ENGL 350** Aspects of the English Language 3
- **CSD/SPED/CDSE Elective** 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)

Old Dominion University
• Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
• Option D. Upper-Division Courses (totaling 6 hours) from outside the College of Education and not required by the major

Requirements for Graduation
Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and 2.50 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 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.

Four-Year Plan - Speech-Language Pathology and Audiology Major - BS (http://catalog.odu.edu/undergraduate/dardencollegeofeducation/communicationdisordersspecialeducation/speechlangpathaud-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Minor in Speech-Language Pathology and Audiology

CSD 350 Survey in Communication Disorders 3
CSD 460 Hearing Disorders and Basic Audiology 3
Electives
Select four of the following: 12
CSD 451 Articulation and Phonological Disorders
CSD 452 Voice and Fluency Disorders
CSD 453 Language Development
CSD 458 Speech and Hearing Science
CSD 459 Methods and Materials in Speech-Language Pathology
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.

Bachelor of Science in Special Education

Carroll M. (C. J.) Butler, Jr., Undergraduate Program Director

The BS in special education draws courses from across the University to prepare teacher candidates interested in teaching special education. Course work spans the disciplines of English literature and composition; history; fine and performing arts; mathematics; natural sciences; social sciences; human growth and development; and educational foundations, technology, assessment, theory, and methods. The broad curriculum, along with the admittance, continuance, and graduation requirements described below, prepares teacher candidates for licensure endorsement for special education general curriculum K-12 for the Commonwealth of Virginia, including passing scores on the Reading for Virginia Educators Assessment and the Virginia Communication and Literacy Assessment.

Major coursework is available in both online and face-to-face formats. Additional information is posted on the departmental website or available in hard copy from the department.

Declaration of Major
To declare the major, teacher candidates must have a 2.75 cumulative grade point average and grades of C- or above in any course required in the program (except ENGL 110C and ENGL 211C, which require a C), pass the prescribed Virginia Board of Education assessment for admission to an approved teacher education program as described herein, and complete 26 credit hours. Teacher candidates who have been admitted to the BS in special education program but who are ineligible to declare the major will be advised as intended 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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, http://www.odu.edu/oce and review the Professional Education Handbook.

Admission to Undergraduate Teacher Education Program

All teacher candidates must be admitted to the special education program as a requirement of continuance and graduation. Admittance to the special education program requires that the teacher candidate:

1. Be a declared BS in special education student.
2. Have a cumulative GPA of 2.75.
3. Have a 2.75 GPA in general education courses.
4. Have a 2.75 GPA in core courses.
5. Have a 2.75 GPA in major courses.
6. Have no grade below a C- in any course required in the program.
7. Submit an application for admittance that is approved by the program and the Darden College of Education and Professional Studies.

Additionally, teacher candidates should be admitted to the special education program by the end of their 60th credit hour. Transfer students with 60 or more credits should be admitted to the special 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 2.75, 2.75 major GPA, 2.75 general education GPA, and 2.75 core GPA.
2. Earn a grade no less than C- in all departmental requirements, major courses, and core courses.
3. Successfully complete a background clearance check.

Background Clearance Requirement: Old Dominion University requires a background check of candidates interested in professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes the FBI fingerprint SP-24 form, the child protective service/social service check, and the sexual offender registry check. Candidates interested in professional education programs are advised to complete this clearance process immediately upon entry since the clearance process takes a minimum of eight weeks to complete. Please contact the Office of Clinical Experiences at 757-683-3348 with any questions.

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.

Additionally, passing scores on the Special Education exit exam, the Virginia Communication and Literacy Assessment, and Reading for Virginia Educators are required in SPED 483 and are a prerequisite to enrollment in SPED 486. Test results will be submitted to the director of the Office of Clinical Experiences. 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 all departmental requirements (C in ENGL 110C and ENGL 211C), major courses, and core courses.
3. Have a minimum cumulative grade point average of 2.75 and 2.75 major GPA.
4. Pass the writing intensive (W) course in the major with a grade of C or higher.
5. Complete the Senior Assessment Survey and the Departmental Senior Exit Survey.
6. Submit a professional portfolio according to Darden College of Education and Professional Studies and program requirements.

Due to changing University requirements, national accreditation standards, and Commonwealth of Virginia licensure regulations, the programs in the Darden College of Education and Professional Studies 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 and Professional Studies website at https://www.odu.edu/eps.

Note for students in Washington State from the Student Achievement Council (SAC) concerning the teacher preparation with licensure in special 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.

### General Education Courses

<table>
<thead>
<tr>
<th>Written Communication*</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C English Composition (C or better required)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 211C English Composition (C or better required)</td>
<td>3</td>
</tr>
<tr>
<td>Literature*</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture (See Requirements for Undergraduate Degrees section of this Catalog for requirement. If language needed, Spanish preferred)</td>
<td>0-6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oral Communication</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 101R Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>COMM 112R Introduction to Interpersonal Communication</td>
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</table>

<table>
<thead>
<tr>
<th>Information Literacy and Research (met in the major with LIBS 110G or STEM 251G)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Human Creativity*</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past*</td>
<td>3</td>
</tr>
<tr>
<td>HIST 104H Interpreting the American Past</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Impact of Technology (met within major)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Human Behavior*</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 203S Lifespan Development</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 230E Introduction to Ethics</td>
<td>3</td>
</tr>
<tr>
<td>or PHIL 250E World Religions: Beliefs and Values</td>
<td>3</td>
</tr>
</tbody>
</table>

### Core Courses

| FOUN 301 Learning and Development | 3 |
| FOUN 302 Assessment of Learning | 3 |
| TLED 315 Foundations of Education: Historical and Contemporary Issues | 3 |
| TLED 325 Communication and Collaboration in Education Settings | 3 |
| TLED 326 Socio-Cultural Perspectives in Education | 3 |
| STEM 370T Technology and Society (writing intensive; C or better required) | 3 |
| TLED 425 Creating and Managing Learning Environments | 3 |
| TLED 426 Introduction to Literacy Research, Theory and Practice in the Classroom | 3 |

### Total Hours

35-41

### Major Courses

| LIBS 110G Information Literacy for the Digital Age | 3 |
| or STEM 251G Computer Literacy: Communication and Information | 3 |
| SPED 400 Foundations of Special Education: Legal Aspects and Characteristics * | 3 |
| SPED 402 Instructional Design I: Learner Characteristics and Assessment | 3 |
| SPED 403 Directed Field Experience in Special Education ** | 2 |
| 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 |
| SPED 417 Collaboration and Transitions | 3 |
| SPED 418 Instructional Strategies to Meet Diverse Learning Needs in Math | 3 |
| SPED 440 Assistive Technology for Diverse Students **** | 3 |
| SPED 483 Field Experience Seminar in Special Education ** ** | 1 |
| SPED 486 Teacher Candidate Internship for Special Endorsement ** ** | 12 |
| TLED 408 Reading and Writing in Content Areas | 3 |

### Total Hours

42

### Total Degree Credits****

120
Departmental requirements for all teacher candidates, not met by the associate degree.

**Admission to undergraduate special education program required prior to registration for SPED 403, SPED 415, SPED 483, and SPED 486. SPED 403 and SPED 415 will each require 45 practicum hours. A background clearance check is required prior to practicum placement. 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.

*** Meets Impact of Technology requirement
**** 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.

LiveText is required for all Special Education majors and minors upon registration for SPED 400.

Passing scores on the Special Education exit exam, the Reading for Virginia Educators Assessment, and Virginia Communication and Literacy Assessment are required in SPED 483 and prior to SPED 486.

Upper-Division General Education
Satisfied in the major.

Four-Year Plan - Bachelor of Science in Special Education (http://catalog.odu.edu/undergraduate/dardencollegeofeducation/communicationdisordersspecialeducation/specialed-bs-fouryearplan)
This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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 special education program (see Darden College of Education and Professional Studies section for specific assessment information). 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.

Counseling and Human Services
Web Site: http://www.odu.edu/chs

Ed Neukrug, 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

Jennifer Simmons, Coordinator
Mark Rehfuss, Online 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 all HMSV courses before taking the internship:

- 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 444 Psycho-educational Groups 3
- HMSV 447 Introduction to Substance Abuse 3
  or HMSV 448 Interventions and Advocacy with Children 3
- HMSV 449 Crisis Intervention, Prevention and Ethics 3
- HMSV 452 Substance Abuse Treatment and Research 3
Family Guidance

Human Services Methods

Interpersonal Relations

Introduction to Substance Abuse

Crisis Intervention, Prevention and Ethics

Field Observation in Human Services

Career Development and Appraisal

Entrepreneurship in Human Services and Non-Profit Fundraising

Lower-Division General Education

Written Communication Skills * 6
Mathematical Skills ** 3
Oral Communication *** 3
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 3

Sociology 201S Introduction to Sociology (C or better required)
The Nature of Science 8
Impact of Technology 3

Total Hours 38-44

* Grade of C or better required in both courses
** STAT 130M preferred.
*** Satisfied by HMSV 339 in the major.

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 444 Psycho-educational Groups 3
HMSV 449 Crisis Intervention, Prevention and Ethics 3
HMSV 491 Family Guidance 3
HMSV 468 Internship in Human Services 12

Choose one of the following:

HMSV 452 Substance Abuse Treatment and Research *
HMSV 494 Entrepreneurship in Human Services and Non-Profit Fundraising *

Choose one of the following:

HMSV 447 Introduction to Substance Abuse *
HMSV 448 Interventions and Advocacy with Children

Total Hours 48

* For students pursuing credentialing as a CSAC or CADC following graduation, HMSV 447 must be taken as the HMSV elective. Additionally, HMSV 452 must be selected as part of the required curriculum instead of HMSV 494. Please see the section below on Substance Abuse Course Sequence for additional information.

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

Requirements for graduation include 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.

Four-Year Plan - Human Services - BS (http://catalog.odu.edu/undergraduate/dardencollegeofeducation/counselinghumanservices/humanservices-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Substance Abuse Course Sequence

For those wishing to pursue credentialing as a Certified Substance Abuse Counselor (CSAC) or Certified Alcohol and Drug Counselor (CADC), the following must be completed: all HMSV degree requirements (core requirements, major requirements, minor requirements, any applicable electives, and General Education requirements) with the selection of HMSV 447 and HMSV 452 as required human services electives. Additionally, HMSV 468 (Internship) is recommended to be in a substance abuse treatment setting.

Minor in Human Services

Area I Courses Required:

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

Area II Courses (Select one from the following):

HMSV 344 Career Development and Appraisal
HMSV 447 Introduction to Substance Abuse
HMSV 448 Interventions and Advocacy with Children
HMSV 449 Crisis Intervention, Prevention and Ethics
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.

Old Dominion University 210
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.

**Minor in Addiction Prevention and Treatment**

The Addiction Prevention and Treatment minor complements many academic programs and majors by providing knowledge and experience in the 12 core competency areas identified by the Substance Abuse and Mental Health Services Administration [SAMSHA] as vital to knowledge, skills and attitudes required for professional practice in addiction services. In addition to fulfilling core competency areas required for addiction services, courses in this minor may meet the didactic requirements for addiction credentialing, such as the Certified Substance Abuse Counselor* (CSAC) credential in Virginia. For completion of a minor, an undergraduate 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 through courses offered by Old Dominion University.

*Students are strongly encouraged to contact their respective state board regarding didactic requirements for specific credentials.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>HMSV 341</td>
<td>Introduction to Human Services</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 343W</td>
<td>Human Services Methods</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 368</td>
<td>Field Observation in Human Services</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 444</td>
<td>Psycho-educational Groups</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 447</td>
<td>Introduction to Substance Abuse</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 452</td>
<td>Substance Abuse Treatment and Research</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

**Certificate in Addiction Prevention and Treatment**

The certificate program consists of six courses in the human services program for a total of 18 credit hours. Students who wish to enroll in these courses are required to have a transcript analysis to ensure that the appropriate prerequisite requirements are met. Students’ prior coursework will be evaluated by an advisor at the time of admission to the certificate program.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td>HMSV 447</td>
<td>Introduction to Substance Abuse</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HMSV 452</td>
<td>Substance Abuse Treatment and Research</td>
<td>3</td>
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<tr>
<td></td>
<td>HMSV 368</td>
<td>Field Observation in Human Services</td>
<td>3</td>
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<tr>
<td></td>
<td>HMSV 444</td>
<td>Psycho-educational Groups</td>
<td>3</td>
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<tr>
<td></td>
<td>HMSV 449</td>
<td>Crisis Intervention, Prevention and Ethics</td>
<td>3</td>
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<td></td>
<td>HMSV 491</td>
<td>Family Guidance</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td><strong>18</strong></td>
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</tbody>
</table>

*Students who have not met the prerequisites may be required to enroll in the following additional courses: HMSV 341 and HMSV 343W.

For completion of the certificate, students must have a minimum cumulative grade point average of 2.00 overall in all courses taken toward the certificate program, a grade of C or better in all prerequisite courses and courses applied to the certificate, and complete a minimum of six hours in upper-level courses required for the certificate through courses offered by Old Dominion University. Transfer courses require approval of the certificate coordinator.

**Educational Foundations and Leadership**

Steven P. Myran, Chair

The Department of Educational Foundations and Leadership offers master's and education specialist degree programs in preK-12 educational leadership and supervision and higher education. The department also offers a Ph.D. in Education with concentrations in preK-12 educational leadership, higher education leadership, and educational psychology and program evaluation. 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**

Web Site: http://www.odu.edu/hms

Lynn L. Ridinger, Chair

The Department of Human Movement Sciences offers programs leading to a Bachelor of Science degree in four areas. These include a B.S. in Exercise Science (pending approval of the State Council of Higher Education for Virginia), a B.S. in Physical Education (PreK-12 teacher preparation), a B.S. in Park, Recreation and Tourism Studies (concentration areas in Tourism Management, Park and Recreation Management, and Therapeutic Recreation), and a B.S. in Sport Management.

**Bachelor of Science—Exercise Science**

*Pending approval from the State Council of Higher Education for Virginia

Laura Hill, Undergraduate Program Director
2022 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.

**Prerequisites**

1. ENGL 110C and ENGL 211C or the equivalent are prerequisites for EXSC 431W.
2. STAT 130M is a prerequisite for EXSC 420.

**Continuance**

1. Students must achieve a grade of C or better in BIOL 240 or 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 overall and 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. 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**

<table>
<thead>
<tr>
<th>Written Communication Skills*</th>
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</thead>
<tbody>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematical Skills**</td>
<td>3</td>
</tr>
<tr>
<td>MATH 102M College Algebra</td>
<td></td>
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<tr>
<td>or MATH 103M College Algebra with Supplemental Instruction</td>
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</table>
Exercise Science Requirements

<table>
<thead>
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<td>Fundamentals of Anatomy and Physiology I</td>
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<td>or BIOL 250</td>
<td>General Anatomy and Physiology I</td>
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<tr>
<td>BIOL 241</td>
<td>Fundamentals of Anatomy and Physiology II</td>
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<td>or BIOL 251</td>
<td>General Anatomy and Physiology II</td>
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<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 122N</td>
<td>and Foundations of Chemistry I Laboratory (C or better required as prerequisite for CHEM 123N-CHEM 124N)</td>
<td>4</td>
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<tr>
<td>CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
<td>4</td>
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<tr>
<td>&amp; CHEM 124N</td>
<td>and Foundations of Chemistry II Laboratory</td>
<td>4</td>
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<tr>
<td>EXSC 225</td>
<td>Introduction to Exercise Science</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 240</td>
<td>Prevention and Care of Injuries Related to Physical Activity</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 250</td>
<td>Strength and Conditioning Leadership</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 322</td>
<td>Anatomical Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 326</td>
<td>Exercise Physiology I</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 327</td>
<td>Exercise Physiology II</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 366</td>
<td>Exercise Science Seminar</td>
<td>1</td>
</tr>
<tr>
<td>EXSC 408</td>
<td>Nutrition for Fitness and Sport</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 415</td>
<td>Exercise Testing for Normal and Special Populations</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 417</td>
<td>Biomechanics</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 428</td>
<td>Exercise Prescription for Chronic Disease</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 431W</td>
<td>Wellness Programming and Administration</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 111N</td>
<td>Introductory General Physics</td>
<td>4</td>
</tr>
<tr>
<td>Total Hours</td>
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<td>56</td>
</tr>
</tbody>
</table>

* Grade of C or better required

** Choose One of the Following Options:

Scientific Foundations of Exercise

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 112N</td>
<td>Introductory General Physics</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 420</td>
<td>Research Methods in Exercise Science</td>
<td>3</td>
</tr>
<tr>
<td>(STAT 130M required as prerequisite)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

Preventive/Rehabilitative Exercise

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXSC 368</td>
<td>Internship</td>
<td>12</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

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)

Requirements for Graduation

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 ENGL 221C or ENGL 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of the Senior Survey.

Four-Year Plan - Exercise Science - Preventive/Rehabilitative - BS

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Four-Year Plan - Exercise Science - Scientific Foundations - BS

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Bachelor of Science - Physical Education

Health and Physical Education PK-12 Teaching Licensure

Katelyn Makovec, Undergraduate Program Director
2030 Student Recreation Center
757 683-3355
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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, http://www.odu.edu/oce and review the Professional Education Handbook.

**Required grade point averages (GPA):**

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required - HPE 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. HPE 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 Subject Assessment, Health and Physical Education content knowledge (formerly Praxis II) (test code 5857) 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.

**Background Clearance Requirement**

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: https://www.odu.edu/oce/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

**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 Subject Assessment, Health and Physical Education Content Knowledge (test code: 5857) – passing score of 160 is required.

To review more information on the Virginia Board of Education Prescribed Licensure Assessments visit the Office of Clinical Experiences website, http://www.odu.edu/oce.

**Graduation**

Requirements for graduation include 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; 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 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.

All PE, HE, HPE, and EXSC courses and BIOL 240 or 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 and Professional Studies 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 Office of Clinical Experiences website, http://www.odu.edu/oce.

**Lower-Division General Education**

- Written Communication Skills * 6
- Oral Communication Skills 3
- COMM 101R Public Speaking (required)
- Mathematical Skills 3
- MATH 102M College Algebra
- 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
- 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 430W in the major.

**Health and Physical Education Requirements**

- BIOL 240 Fundamentals of Anatomy and Physiology I 4
- or BIOL 250 Human Anatomy and Physiology I
- EXSC 322 Anatomical Kinesiology 3
- TLED 408 Reading and Writing in Content Areas 3
- TLED 430W PK-12 Instructional Technology 3
- HPE 200 Foundations of Education, Physical Education and Health 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPE 218</td>
<td>Aquatics and Outdoor Education</td>
<td>2</td>
</tr>
<tr>
<td>HPE 220</td>
<td>Teaching of Team Sports</td>
<td>3</td>
</tr>
<tr>
<td>HPE 222</td>
<td>Teaching Individual Sports and Dance</td>
<td>3</td>
</tr>
<tr>
<td>HPE 224</td>
<td>Personal and Community Health</td>
<td>3</td>
</tr>
<tr>
<td>HPE 230</td>
<td>Seminar and Field Experience in Physical Education and Health</td>
<td>2</td>
</tr>
<tr>
<td>HPE 301W</td>
<td>Methods and Materials in Teaching Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>HPE 317</td>
<td>Human Growth &amp; Motor Development</td>
<td>3</td>
</tr>
<tr>
<td>HPE 318</td>
<td>Motor Learning</td>
<td>3</td>
</tr>
<tr>
<td>HPE 324</td>
<td>Teaching Injury Care for Sports</td>
<td>3</td>
</tr>
<tr>
<td>HPE 369</td>
<td>Practicum Experience and Instructional Planning in Health and Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>HPE 400</td>
<td>Management Skills for Teaching Health and Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>HPE 402</td>
<td>Methods and Materials in Health Education</td>
<td>3</td>
</tr>
<tr>
<td>HPE 404</td>
<td>Adapted Physical Education</td>
<td>4</td>
</tr>
<tr>
<td>HPE 406</td>
<td>Tests and Measurement in Physical Education and Health</td>
<td>3</td>
</tr>
<tr>
<td>HPE 409</td>
<td>Physiology of Exercise</td>
<td>3</td>
</tr>
<tr>
<td>HPE 430</td>
<td>Nutrition and Fitness Education</td>
<td>3</td>
</tr>
<tr>
<td>HPE 480</td>
<td>Teacher Candidate Seminar</td>
<td>1</td>
</tr>
<tr>
<td>HPE 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
</tbody>
</table>

**Total Hours**: 76

* Grade of C or better required in HPE 301W; grade of C- or better required in all other courses.

### 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 240 or 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 120 total 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.

### Four-Year Plan - Health and Physical Education PK-12 Teaching Licensure Concentration - BS

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Bachelor of Science—Park, Recreation and Tourism Studies

Shelly Beaver, Undergraduate Program Director  
1006A Student Recreation Center  
757 683-4415

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 park, recreation and tourism studies major.

### Admission

Students must:

1. Have completed 12 semester hours of course work (including ENGL 110C) with a grade point average of 2.00
2. Have a personal interview with a faculty member in the program.
3. Complete a background check for courses where students will have contact with youth.

### 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 PRTS 483W with a grade of C- or higher in the remaining PRTS core courses
4. Earn a Grade of C or higher in PRTS 251, PRTS 261, or PRTS 271
5. Complete ENGL 110C, ENGL 211C or ENGL 221C or ENGL 231C (preferred), and the writing intensive (W) course in the major with a grade of C or better
6. 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 ENGL 221C or ENGL 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

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Required Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication Skills</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematical Skills</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

Therapeutic recreation concentration must take PSYC 201S - Introduction to Psychology.

**Impact of Technology**: 3

**Total Hours**: 41-47

* Grade of C or better required in both courses.
### Four-Year Plan - PRTS - Park and Recreation Management - BS

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

#### Park, Recreation and Tourism Studies Core Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRTS 211</td>
<td>Foundations of Parks, Recreation and Tourism</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 212</td>
<td>Recreation Programming and Leadership</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 285</td>
<td>Diversity in Park, Recreation and Tourism Studies</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 301</td>
<td>Youth Development through Recreation - Lecture</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 303</td>
<td>Youth Development through Recreation - Lab (must register jointly with PRTS 301)</td>
<td>1</td>
</tr>
<tr>
<td>PRTS 332</td>
<td>Personnel Management in Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 366</td>
<td>Internship Seminar</td>
<td>1</td>
</tr>
<tr>
<td>PRTS 368</td>
<td>Internship</td>
<td>12</td>
</tr>
<tr>
<td>PRTS 425</td>
<td>Financial Management in Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 482W</td>
<td>Applied Research in Park, Recreation &amp; Tourism - Lecture</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 483W</td>
<td>Applied Research in Park, Recreation &amp; Tourism - Lab (must register jointly with PRTS 482W)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total Hours**: 36

* Grade of C- or better required.

**Select one of the following three concentration areas:**

#### Park and Recreation Management

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 311</td>
<td>Marketing Principles and Problems</td>
<td>3</td>
</tr>
<tr>
<td>PAS 300</td>
<td>Foundations of Public Service</td>
<td>3</td>
</tr>
<tr>
<td>PAS 410</td>
<td>Public and Non-profit Organization</td>
<td>3</td>
</tr>
<tr>
<td>POLS 300</td>
<td>Introduction to Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 251</td>
<td>Introduction to Park and Recreation Management</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 405</td>
<td>Outdoor Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 406</td>
<td>Outdoor Leadership and Environmental Education</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 433</td>
<td>Camp Administration</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 475</td>
<td>Sustainable Tourism Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**Advisor approved elective**: 1-3

**Total Hours**: 31-33

* Grade of C- or better required.

### Four-Year Plan - PRTS - Tourism Management - BS

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

#### Tourism Management

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 201</td>
<td>Principles of Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 202</td>
<td>Principles of Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202S</td>
<td>Principles of Microeconomics</td>
<td></td>
</tr>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 311</td>
<td>Marketing Principles and Problems</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 271</td>
<td>Introduction to Tourism Management</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 369</td>
<td>Practicum in Parks, Recreation and Tourism Studies</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 441</td>
<td>Marketing of Hospitality Services</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 461</td>
<td>Tourism and the Hospitality Industry</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 475</td>
<td>Sustainable Tourism Management</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 490</td>
<td>Convention and Meeting Services</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 491</td>
<td>Festival and Event Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours**: 33

* Grade of C- or better required.

### Four-Year Plan - PRTS - Therapeutic Recreation - BS

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

#### Therapeutic Recreation

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 240</td>
<td>Fundamentals of Anatomy and Physiology I</td>
<td>4</td>
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<tr>
<td>BIOL 250</td>
<td>Human Anatomy and Physiology I</td>
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</tr>
<tr>
<td>BIOL 241</td>
<td>Fundamentals of Anatomy and Physiology II</td>
<td>4</td>
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<tr>
<td>PSYC 203S</td>
<td>Lifespan Development</td>
<td>3</td>
</tr>
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<td>PSYC 405</td>
<td>Abnormal Psychology</td>
<td>3</td>
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<tr>
<td>PRTS 261</td>
<td>Introduction to Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 410</td>
<td>Evidence-Based Programming and Practice in Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 420</td>
<td>Intervention Techniques in Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 430</td>
<td>Assessment and Documentation in Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 450</td>
<td>Disability Culture in Therapeutic Recreation</td>
<td>3</td>
</tr>
</tbody>
</table>
Total Hours 32

* Grade of C or better required.
** Grade of C- or better required.

**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**

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 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. Additional elective hours may be needed in order to complete the minimum 120 credits required for the degree.

**Bachelor of Science - Sport Management**

Michelle Redmond, Undergraduate Program Director
2020 Student Recreation Center
757 683-3354

This program is designed to prepare students for entry-level positions within the sport industry. Students acquire knowledge and skills needed for careers with professional sport teams and leagues, intercollegiate athletics, sport facility and event management companies, sport marketing agencies, and other sport-related businesses. The requirements for the program 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 ENGL 221C or ENGL 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 | 3 |
| or MATH 103M College Algebra with Supplemental Instruction | 3 |
| or 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 | 8 |
| Human Behavior | 3 |
| ECON 200S Basic Economics | 3 |
| or ECON 201S Principles of Macroeconomics | 3 |
| Impact of Technology | 3 |

Total Hours 38-44

* 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 |

**Additional Required Courses**

| 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 |

Total Hours 61
* Grade of C or better required.

** 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**

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 ENGL 221C or ENGL 231C and the writing intensive (W) course in the major with a grade of C or better, and completion of the Senior Assessment.

**Four-Year Plan - Sport Management - BS**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Minors**

**Coaching Education**

BIOL 240 or BIOL 250 and HPE 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:

- HPE 409 Physiology of Exercise 3
- SMGT/PE 415 Principles of Coaching Management 3
- SMGT/PE 456 Sport Psychology 3
- PE 368 Coaching Internship 6

Total Hours 15

**Exercise Science**

BIOL 240 or 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 Anatomical Kinesiology 3
- HPE 409 Physiology of Exercise 3
- EXSC 415 Exercise Testing for Normal and Special Populations 4

Select one of the following:

- EXSC 240 Prevention and Care of Injuries Related to Physical Activity 3
- EXSC 369 Practicum in Exercise Science
- EXSC 408 Nutrition for Fitness and Sport
- EXSC 420 Research Methods in Exercise Science
- EXSC 428 Exercise Prescription for Chronic Disease

Total Hours 13

**Health Education—Nonteaching Track**

BIOL 240 or BIOL 250 and HPE 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:

- HPE 317 Human Growth & Motor Development 3
- HPE 324 Teaching Injury Care for Sports 3
- HPE 402 Methods and Materials in Health Education 3
- HPE 430 Nutrition and Fitness Education 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:

- PRTS 405 Outdoor Recreation
- PRTS 406 Outdoor Leadership and Environmental Education
- PRTS 433 Camp Administration
- PRTS 441 Marketing of Hospitality Services
- PRTS 461 Tourism and the Hospitality Industry
- PRTS 475 Sustainable Tourism Management
- PRTS 490 Convention and Meeting Services
- PRTS 491 Festival and Event Management

Total Hours 12

* Grade of C- or better required.

**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:

- 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 Coaching 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:

- PRTS 410 Evidence-Based Programming and Practice in Therapeutic Recreation
- PRTS 420 Intervention Techniques in Therapeutic Recreation
- PRTS 450 Disability Culture in Therapeutic Recreation

Total Hours 12
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
- HLSC 405 Intercultural Study Abroad on Global Health 1-3
- HPE 317 Human Growth & Motor Development 3
- HPE 400 Management Skills for Teaching Health and Physical Education 3
- HPE 402 Methods and Materials in Health Education 3
- HPE 409 Physiology of Exercise 3
- HPE 430 Nutrition and Fitness Education 3
- HMSV 341 Introduction to Human Services 3
- HMSV 491 Family Guidance 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 Prior Learning Assessment Credit Options at the Undergraduate Level in this Catalog.

Science, Technology, Engineering, and Mathematics (STEM) Education and Professional Studies

Web Site: http://www.odu.edu/stemps

Petros Katsioloudis, Chair

The Department of STEM Education and Professional Studies offers three concentrations under the Bachelor of Science degree in occupational and technical studies: training specialist, fashion merchandising, and industrial technology. The department also offers a Bachelor of Science degree in career and technical education (p. 222) with concentrations in marketing education and technology education. At the graduate level, the department offers the Master of Science degree in career and technical education, and the Ph.D. in Education with concentrations in instructional 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

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

<table>
<thead>
<tr>
<th>Written Communication *</th>
<th>Oral Communication</th>
<th>Mathematical Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

MATH 102M College Algebra
or MATH 103M College Algebra with Supplemental Instruction

Language and Culture 0-6
Information Literacy and Research 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM 251G</td>
<td>Computer Literacy: Communication and Information</td>
</tr>
</tbody>
</table>

Human Creativity 3
Interpreting the Past 3
Literature 3
Philosophy and Ethics 3
The Nature of Science 8

Impact of Technology is satisfied by STEM 370T in the major.

**Technical Content Courses** 58

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 201</td>
<td>Principles of Financial Accounting</td>
</tr>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and Management</td>
</tr>
<tr>
<td>MKTG 311</td>
<td>Marketing Principles and Problems</td>
</tr>
<tr>
<td>SEPS 100</td>
<td>Sales Techniques</td>
</tr>
<tr>
<td>SEPS 102</td>
<td>Advertising and Promotion</td>
</tr>
<tr>
<td>SEPS 208</td>
<td>Retail Merchandising and Buying</td>
</tr>
<tr>
<td>SEPS 220</td>
<td>The Fashion Industry</td>
</tr>
<tr>
<td>SEPS 234</td>
<td>Survey of Dress and Costume</td>
</tr>
<tr>
<td>SEPS 303</td>
<td>Social Aspects of Clothing</td>
</tr>
<tr>
<td>SEPS 355</td>
<td>Fashion Consumer Behavior</td>
</tr>
<tr>
<td>SEPS 400</td>
<td>Instructional Systems Development</td>
</tr>
<tr>
<td>SEPS 402</td>
<td>Instructional Methods in Occupational Studies</td>
</tr>
<tr>
<td>SEPS 405</td>
<td>Directed Work Experience</td>
</tr>
<tr>
<td>SEPS 415</td>
<td>Advanced Merchandising</td>
</tr>
<tr>
<td>SEPS 422</td>
<td>Fashion Product Development</td>
</tr>
<tr>
<td>SEPS 480</td>
<td>Senior Project: Merchandise Retailing</td>
</tr>
<tr>
<td>SEPS 481</td>
<td>Occupational Career Transition</td>
</tr>
<tr>
<td>STEM 350</td>
<td>Communication Technology Processes</td>
</tr>
<tr>
<td>STEM 370T</td>
<td>Technology and Society (Writing Intensive)</td>
</tr>
</tbody>
</table>

Select four of the following or other advisor approved electives: 12

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPS 409</td>
<td>Fashion Forecasting Market Trip</td>
</tr>
<tr>
<td>SEPS 410</td>
<td>The Foreign Fashion Market Trip</td>
</tr>
<tr>
<td>SEPS 423</td>
<td>Visual Merchandising and Display</td>
</tr>
<tr>
<td>SEPS 424</td>
<td>Fashion, Textiles, and Construction Analysis</td>
</tr>
<tr>
<td>SEPS 431</td>
<td>Web-Based Organization for Fashion</td>
</tr>
</tbody>
</table>

Elective Credit (consult the department advisor) 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)

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### Requirements for Graduation

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 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.

### Four-Year Plan - OTS - Fashion Merchandising - BS ([http://catalog.odu.edu/undergraduate/dardencollegeofeducation/stemeducationprofessionalstudies/ots-fashionmerch-bs-fouryearplan](http://catalog.odu.edu/undergraduate/dardencollegeofeducation/stemeducationprofessionalstudies/ots-fashionmerch-bs-fouryearplan))

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### 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 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** (met in the major by HMSV 339)
- **Mathematical Skills** 6
- MATH 102M College Algebra
  or MATH 103M College Algebra with Supplemental Instruction
- **Statistic** 3
- MATH 130M Elementary Statistics
- **Language and Culture** 0-6
- **Information Literacy and Research** 3
- **Technical Content-General Emphasis** 24
- **Computer Aided Drafting**
- MATH 102M College Algebra
  or MATH 103M College Algebra with Supplemental Instruction
- **Computer Literacy: Communication and Information** 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 is satisfied by STEM 370T in the major.

### Technical Content-General Emphasis

#### Supervision

- **Computer Aided Drafting**
- **Industrial Materials**
- **Materials and Processes Technology**
- **Energy Systems: Basic Electricity**
- **Technological Systems Control**
- **Manufacturing Technology**
- **Communication Technology**
- **Industrial Design**
- **Interpersonal Relations**
- **Industrial/Organizational Psychology**
- **Workforce Supervision**
- **Instructional Systems Development**

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219 Science, Technology, Engineering, and Mathematics (STEM) Education and Professional Studies
SEPS 402 Instructional Methods in Occupational Studies

STEM 370T Technology and Society (Writing Intensive) **

** Business Cognate 21

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 201</td>
<td>Principles of Financial Accounting</td>
</tr>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and Management</td>
</tr>
<tr>
<td>MGMT 330</td>
<td>Organizational Behavior</td>
</tr>
<tr>
<td>or MGMT 340 Human Resources Management</td>
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</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKTG 311</td>
<td>Marketing Principles and Problems</td>
</tr>
<tr>
<td>Approved Business Electives (Three Courses)</td>
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</tbody>
</table>

Elective credit 13

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 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

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 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.

** Four-Year Plan - OTS - Industrial Technology - BS (http://catalog.odu.edu/undergraduate/dardencollegeofeducation/stemeducationprofessionalstudies/ots-industrialtech-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

** 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 (met in the major by HMSV 339)
- Mathematical Skills 3
- MATH 102M College Algebra
  or MATH 103M College Algebra with Supplemental Instruction

** Language and Culture 0-6
- Information Literacy and Research 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>STEM 251G</td>
<td>Computer Literacy: Communication and Information</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
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<tr>
<td>ECON 2008 Basic Economics</td>
<td></td>
</tr>
</tbody>
</table>

Impact of Technology is satisfied by STEM 370T in the major.

** Technical Content Courses 46

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 201</td>
<td>Principles of Financial Accounting</td>
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<tr>
<td>HMSV 339</td>
<td>Interpersonal Relations</td>
</tr>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and Management</td>
</tr>
<tr>
<td>MGMT 330</td>
<td>Organizational Behavior</td>
</tr>
<tr>
<td>or MGMT 340 Human Resources Management</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKTG 311</td>
<td>Marketing Principles and Problems</td>
</tr>
<tr>
<td>PSYC 201S</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>PSYC 303</td>
<td>Industrial/Organizational Psychology</td>
</tr>
<tr>
<td>SEPS 302</td>
<td>Workforce Supervision</td>
</tr>
<tr>
<td>SEPS 389</td>
<td>Education and Training of Adults</td>
</tr>
<tr>
<td>SEPS 400</td>
<td>Instructional Systems Development</td>
</tr>
<tr>
<td>SEPS 402</td>
<td>Instructional Methods in Occupational Studies</td>
</tr>
<tr>
<td>SEPS 405</td>
<td>Directed Work Experience</td>
</tr>
<tr>
<td>STEM 350</td>
<td>Technology and Society (Writing Intensive) **</td>
</tr>
<tr>
<td>or STEM 351 Communication Technology</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPS 450</td>
<td>Assessment, Evaluation and Improvement</td>
</tr>
</tbody>
</table>

** Training Electives 27

Elective Credit 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

*** 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

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 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.

Four-Year Plan - OTS - Training Specialist - BS (http://catalog.odu.edu/undergraduate/dardencollegeofeducation/stemeducationprofessionalstudies/ots-trainingspecialist-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Bachelor of Science in Career and Technical Education - Marketing Education and Technical Education Concentrations

(p. 222)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPS 302</td>
<td>Workforce Supervision</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 303</td>
<td>Social Aspects of Clothing</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 367</td>
<td>Cooperative Education</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 405</td>
<td>Directed Work Experience</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 409</td>
<td>Fashion Forecasting Market Trip</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 410</td>
<td>The Foreign Fashion Market Trip</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 415</td>
<td>Advanced Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 422</td>
<td>Fashion Product Development</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 423</td>
<td>Visual Merchandising and Display</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 424</td>
<td>Fashion, Textiles, and Construction Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 431</td>
<td>Web-Based Organization for Fashion</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 435</td>
<td>International Retailing</td>
<td>3</td>
</tr>
<tr>
<td>or SEPS 440</td>
<td>Fashion Global Sourcing/Supply Chain Management</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 495</td>
<td>Topics in Occupational Education *</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 496</td>
<td>Topics in Career and Technical Education *</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 12

* 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 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 concentration areas. The minor requires 15 hours of course work as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPS 389</td>
<td>Education and Training of Adults</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 400</td>
<td>Instructional Systems Development</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 402</td>
<td>Instructional Methods in Occupational Studies</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 450</td>
<td>Assessment, Evaluation and Improvement</td>
<td>3</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 360</td>
<td>Introduction to Global Health</td>
<td>3</td>
</tr>
<tr>
<td>COMM 340</td>
<td>Media and Popular Culture</td>
<td>3</td>
</tr>
<tr>
<td>COMM 372T</td>
<td>Introduction to New Media Technologies</td>
<td>3</td>
</tr>
<tr>
<td>COMM 400W</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 401</td>
<td>Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>COMM 448</td>
<td>Transnational Media Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 300T</td>
<td>Computers in Society</td>
<td>3</td>
</tr>
<tr>
<td>CS 312</td>
<td>Internet Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ECON 402</td>
<td>Transportation Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 454W</td>
<td>Economic Development</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 380</td>
<td>Reporting and News Writing I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 382</td>
<td>Reporting News for Television and Digital Media</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 301</td>
<td>Principles of Environmental Health Science</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 402W</td>
<td>Environmental and Occupational Health</td>
<td>3</td>
</tr>
<tr>
<td>Administration and Law</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GEOG 305</td>
<td>World Resources</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 306T</td>
<td>Hazards: Natural and Technological</td>
<td>3</td>
</tr>
<tr>
<td>HIST 304T</td>
<td>History of Medicine, Disease, and Health Technology</td>
<td>3</td>
</tr>
<tr>
<td>HIST 389T</td>
<td>Technology and Civilization</td>
<td>3</td>
</tr>
<tr>
<td>HIST 386T/SCI 302T</td>
<td>The Evolution of Modern Science</td>
<td>3</td>
</tr>
<tr>
<td>IT 360T</td>
<td>Principles of Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 335T</td>
<td>Music Technology Survey</td>
<td>3</td>
</tr>
<tr>
<td>OPMT 303</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 355E</td>
<td>Cybersecurity Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 383T</td>
<td>Technology: Its Nature and Significance</td>
<td>3</td>
</tr>
<tr>
<td>POLS 350T</td>
<td>Technology and War</td>
<td>3</td>
</tr>
<tr>
<td>SOC 352</td>
<td>War and Peace</td>
<td>3</td>
</tr>
<tr>
<td>STEM 370T</td>
<td>Technology and Society</td>
<td>3</td>
</tr>
<tr>
<td>STEM 382</td>
<td>Industrial Design</td>
<td>3</td>
</tr>
<tr>
<td>WMST 390T</td>
<td>Women and Technology Worldwide</td>
<td>3</td>
</tr>
</tbody>
</table>

The interdisciplinary minor in the Impact of Technology requires 15 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. An overall grade point average of 2.0 or above in all courses specified as a requirement for the certificate is required for the award of the certificate. This certificate requires successful completion of the following 21 credit hours (seven courses).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPS 302</td>
<td>Workforce Supervision</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 400</td>
<td>Instructional Systems Development</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 402</td>
<td>Instructional Methods in Occupational Studies</td>
<td>3</td>
</tr>
<tr>
<td>STEM 351</td>
<td>Communication Technology</td>
<td>3</td>
</tr>
<tr>
<td>STEM 370T</td>
<td>Technology and Society</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 303</td>
<td>Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 343W</td>
<td>Human Services Methods</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours** 21

**Bachelor of Science - Career and Technical Education**

**Bachelor of Science - Career and Technical Education**

**Admission**

Old Dominion University students seeking admission to an approved teacher education program must have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, https://www.odu.edu/oce and review the Professional Education Handbook.

Students must have an interview with the program leader. Students must be admitted into the approved marketing education or technology education teacher preparation program prior to enrolling in SEPS 408.

**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 GPA of 2.75 and a core GPA of 2.75 with no earned grade less than C- in all courses taken in the major and in the core.
3. Successfully complete SEPS 297.
4. Take and pass the Virginia Communication and Literacy Assessment (VCLA) and the appropriate PRAXIS Subject Assessment (Technology Education – Content Knowledge, 5051 or Marketing Education – Content Knowledge, 5561) 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.

**Background Clearance Requirement**

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU background check process is located at: https://www.odu.edu/oce/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

**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 Subject Assessment (Technology Education – Content Knowledge, 5051 with a score of 162 or Marketing Education – Content Knowledge, 5561 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 Office of Clinical Experiences in room 2345 of the Education Building. To review more information on the Virginia Board of Education Prescribed Assessments, visit the Office of Clinical Experiences website, https://www.odu.edu/oce.

**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 core.
2. Earned a passing grade in student teaching.
3. Completed 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.
4. Completed the senior assessment.

Due to changing University requirements, national accreditation standards, and Commonwealth licensure regulations, the programs in the Darden College of Education and Professional Studies 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.

**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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 102M</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 103M</td>
<td>College Algebra with Supplemental Instruction</td>
<td>0-6</td>
</tr>
</tbody>
</table>

**Information Literacy and Research** is satisfied by STEM 251G in the major.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 211C</td>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 221C</td>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 231C</td>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 320</td>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>ENGL 330</td>
<td>Human Behavior</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 203S</td>
<td>Lifespan Development</td>
<td></td>
</tr>
</tbody>
</table>

Impact of Technology is satisfied by STEM 370T in the major.

Old Dominion University 222
### Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOUN 301</td>
<td>Learning and Development</td>
<td>3</td>
</tr>
<tr>
<td>FOUN 302</td>
<td>Assessment of Learning</td>
<td>3</td>
</tr>
<tr>
<td>STEM 370T</td>
<td>Technology and Society (Writing Intensive)</td>
<td>3</td>
</tr>
<tr>
<td>TLED 315</td>
<td>Foundations of Education: Historical and Contemporary Issues</td>
<td>3</td>
</tr>
<tr>
<td>TLED 325</td>
<td>Communication and Collaboration in Education Settings</td>
<td>3</td>
</tr>
<tr>
<td>TLED 326</td>
<td>Socio-Cultural Perspectives in Education</td>
<td>3</td>
</tr>
<tr>
<td>TLED 425</td>
<td>Creating and Managing Learning Environments</td>
<td>3</td>
</tr>
<tr>
<td>TLED 426</td>
<td>Introduction to Literacy, Theory and Practice in the Classroom</td>
<td>3</td>
</tr>
</tbody>
</table>

### Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 200S</td>
<td>Basic Economics</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 311</td>
<td>Marketing Principles and Problems</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 402</td>
<td>Consumer Behavior</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 100</td>
<td>Sales Techniques</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 102</td>
<td>Advertising and Promotion</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 297</td>
<td>Observation and Participation</td>
<td>1</td>
</tr>
<tr>
<td>SEPS 400</td>
<td>Instructional Systems Development</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 401</td>
<td>Foundations of Career and Technical Education</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 402</td>
<td>Instructional Methods in Occupational Studies</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 405</td>
<td>Directed Work Experience</td>
<td>4</td>
</tr>
<tr>
<td>SEPS 415</td>
<td>Advanced Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 485</td>
<td>Student Teaching</td>
<td>12</td>
</tr>
<tr>
<td>STEM 251G</td>
<td>Computer Literacy: Communication and Information</td>
<td>3</td>
</tr>
<tr>
<td>STEM 351</td>
<td>Communication Technology</td>
<td>3</td>
</tr>
<tr>
<td>Elective Credit</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

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

Satisfied in the major.

### Four-Year Plan - Career and Technical Education - Marketing Education

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Technology Education Concentration

This program is designed to prepare students to teach technology education subjects in middle schools and high schools. It is an approved program for meeting licensure requirements to teach technology education in Virginia. Requirements are as follows.

#### Lower-Division General Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 102M</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 103M</td>
<td>College Algebra with Supplemental Instruction</td>
<td>0-6</td>
</tr>
</tbody>
</table>

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
- Human Behavior: 3

Impact of Technology is met through STEM 370T in the major.

**PSYC 203S** Lifespan Development

### Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOUN 301</td>
<td>Learning and Development</td>
<td>3</td>
</tr>
<tr>
<td>FOUN 302</td>
<td>Assessment of Learning</td>
<td>3</td>
</tr>
<tr>
<td>STEM 370T</td>
<td>Technology and Society (Writing Intensive)</td>
<td>3</td>
</tr>
<tr>
<td>TLED 315</td>
<td>Foundations of Education: Historical and Contemporary Issues</td>
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</tr>
<tr>
<td>TLED 325</td>
<td>Communication and Collaboration in Education Settings</td>
<td>3</td>
</tr>
<tr>
<td>TLED 326</td>
<td>Socio-Cultural Perspectives in Education</td>
<td>3</td>
</tr>
<tr>
<td>TLED 425</td>
<td>Creating and Managing Learning Environments</td>
<td>3</td>
</tr>
<tr>
<td>TLED 426</td>
<td>Introduction to Literacy, Theory and Practice in the Classroom</td>
<td>3</td>
</tr>
</tbody>
</table>

### Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 120</td>
<td>Computer Aided Drafting</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 297</td>
<td>Observation and Participation</td>
<td>1</td>
</tr>
<tr>
<td>SEPS 400</td>
<td>Instructional Systems Development</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 401</td>
<td>Foundations of Career and Technical Education</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 402</td>
<td>Instructional Methods in Occupational Studies</td>
<td>3</td>
</tr>
<tr>
<td>SEPS 485</td>
<td>Student Teaching</td>
<td>12</td>
</tr>
<tr>
<td>STEM 110T</td>
<td>Technology and Your World</td>
<td>3</td>
</tr>
<tr>
<td>STEM 221</td>
<td>Industrial Materials</td>
<td>3</td>
</tr>
<tr>
<td>STEM 231</td>
<td>Materials and Processes Technology</td>
<td>3</td>
</tr>
<tr>
<td>STEM 241</td>
<td>Energy Systems: Basic Electricity</td>
<td>3</td>
</tr>
<tr>
<td>STEM 242</td>
<td>Technological Systems Control</td>
<td>3</td>
</tr>
<tr>
<td>STEM 251G</td>
<td>Computer Literacy: Communication and Information</td>
<td>3</td>
</tr>
<tr>
<td>STEM 351</td>
<td>Communication Technology</td>
<td>3</td>
</tr>
<tr>
<td>STEM 382</td>
<td>Industrial Design</td>
<td>3</td>
</tr>
<tr>
<td>Elective Credit</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

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
Satisfied in the major.

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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:

1. 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
   Total Hours 31

2. 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

3. Document at least 4000 clock hours of marketing-related work experience completed within the past five years or complete SEPS 405.

Passing scores on the Praxis Subject Assessment, Marketing Education Content Knowledge are required before teacher internship. Passing 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:

1. 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
   Total Hours 15

2. 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

3. 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
Web Site: http://www.odu.edu/teaching
KaaVonia Hinton, Chair

Old Dominion University 224
The Department of Teaching and Learning aims to promote the development of teacher candidates as professional educators, leaders, and critically engaged citizens. Through these efforts, teacher candidates become innovative and creative educators who make a difference for diverse learners. The Department offers three undergraduate programs: B.S. in Early Childhood Education, B.S. in Elementary Education, and MonarchTeach. The department also offers professional education courses to students who wish to teach in disciplines in secondary schools and are pursuing courses of study leading to baccalaureate degrees in either the College of Arts and Letters or the College of Sciences.

**Bachelor of Science in Early Childhood Education**

Kristine Sunday, Undergraduate Program Director

The BS in Early Childhood Education draws courses from across the University to prepare teacher candidates interested in teaching early childhood education. Course work spans the disciplines of English literature and composition; history; fine and performing arts; mathematics; natural sciences; social sciences; human growth and development; and educational foundations, technology, assessment, theory, and methods. The broad curriculum, along with the admittance, continuance, and graduation requirements described below, prepares teacher candidates to meet state license standards for the Commonwealth of Virginia, including passing scores on the Reading for Virginia Educators Assessment and the Virginia Communication and Literacy Assessment. Core coursework is available in both online and face-to-face formats. Additional information is posted on the department's website or available in hard copy from the department.

**Declaration of Major**

To declare the major, teacher candidates must have a 2.75 cumulative grade point average and grades of C- or above in any course required in the program (except ENGL 110C and ENGL 211C, which require a C), pass the prescribed Virginia Board of Education assessment for admission to an approved teacher education program as described herein, and complete 26 credit hours. Teacher candidates who have been admitted to the BS in Early Childhood Education program but who are ineligible to declare the major will be advised as intended 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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, http://www.odu.edu/oce and review the Professional Education Handbook.

**Admission to Undergraduate Teacher Education Program**

All teacher candidates must be admitted to the Early Childhood Education program as a requirement of continuance and graduation. Admittance to the early childhood education program requires that the teacher candidate:

1. Complete all program requirements.
2. Earn a grade no less than C- in all departmental requirements (C in ENGL 110C and ENGL 211C), major courses, and core courses.
3. Successfully complete a background clearance check.

**Continuance**

Teacher candidates must:

1. Maintain a cumulative grade point average of 2.75, 2.75 major GPA, and 2.75 core GPA.
2. Earn a grade no less than C- in all departmental requirements, major courses, and core courses.
3. Successfully complete a background clearance check.

**Background Clearance Requirement**: Old Dominion University requires a background clearance check of candidates interested in professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes the FBI fingerprint SP-24 form, the child protective service/social service check, and the sexual offender registry check. Candidates interested in professional education programs are advised to complete this clearance process immediately upon entry since the clearance process takes a minimum of eight weeks to complete. Please contact the Office of Clinical Experiences at 757-683-3348 with any questions.

Teacher candidates who fail to meet program requirements for two consecutive semesters will be encouraged to consider other academic and professional goals.

Additionally, passing scores on the Praxis Multiple Subject Assessment for Elementary Education, the Virginia Communication and Literacy Assessment and Reading for Virginia Educators are required in TLED 483. Test results will be submitted to the director of the Office of Clinical Experiences. 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 all departmental requirements (C in ENGL 110C and ENGL 211C), major courses, and core courses.
3. Have a minimum cumulative grade point average of 2.75 and 2.75 major GPA.
4. Pass the writing intensive (W) course in the major with a grade of C or higher.
5. Complete the Senior Assessment Survey and the Departmental Senior Exit Survey.
6. Submit a professional portfolio according to Darden College of Education and Professional Studies and program requirements.

Due to changing University requirements, national accreditation standards, and Commonwealth of Virginia licensure regulations, the programs in the Darden College of Education and Professional Studies 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 and Professional Studies website at https://www.odu.edu/eps.

Note for students in Washington State from the Student Achievement Council (SAC) concerning the teacher preparation with licensure in special 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.

**Requirements**

**Lower-Division General Education**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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<tr>
<td>ENGL 110C</td>
<td>English Composition (C or better required) **</td>
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<tr>
<td>ENGL 211C</td>
<td>English Composition (C or better required) **</td>
<td>3</td>
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<tr>
<td>Oral Communication</td>
<td>3</td>
<td></td>
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<tr>
<td>Language and Culture (See Requirements for Undergraduate Degrees section of this Catalog for requirement)</td>
<td>0-6</td>
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</tr>
<tr>
<td>Information Literacy and Research (met in the major with LIBS 110G)</td>
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<table>
<thead>
<tr>
<th>Course Code</th>
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<td>Human Creativity</td>
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<td>Literature</td>
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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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<tr>
<td>Interpreting the Past (HIST 104H required) **</td>
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<tr>
<td>Human Behavior (PSYC 203S required) **</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Impact of Technology (met in major)</td>
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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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<tr>
<td>Philosophy and Ethics (PHIL 110P or PHIL 230E required)</td>
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<th>Course Code</th>
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<th>Hours</th>
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<tr>
<td>MATH 102M</td>
<td>College Algebra **</td>
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<td>or</td>
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<tr>
<td>MATH 103M</td>
<td>College Algebra with Supplemental Instruction **</td>
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<table>
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<tr>
<th>Nature of Science **</th>
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<tr>
<td>BIOL 105N</td>
<td>Biology for Nonscience Majors I (preferred)</td>
</tr>
<tr>
<td>or BIOL 106N</td>
<td>Biology for Nonscience Majors II</td>
</tr>
<tr>
<td>or BIOL 110N/111N</td>
<td>Environmental Sciences</td>
</tr>
<tr>
<td>or BIOL 112N/113N</td>
<td>Environment and Man</td>
</tr>
<tr>
<td>or BIOL 117N/118N</td>
<td>Introduction to Human Biology</td>
</tr>
<tr>
<td>or BIOL 121N/122N</td>
<td>General Biology I</td>
</tr>
</tbody>
</table>

| and                        |       |
| PHYS 101N                 | Conceptual Physics (preferred)                |
| or CHEM 105N/106N         | Introductory Chemistry                        |

**Core Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOUN 301</td>
<td>Learning and Development</td>
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<tr>
<td>FOUN 302</td>
<td>Assessment of Learning</td>
<td>3</td>
</tr>
<tr>
<td>TLED 315</td>
<td>Foundations of Education: Historical and</td>
<td>3</td>
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<tr>
<td></td>
<td>Contemporary Issues ***</td>
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<td>TLED 325</td>
<td>Communication and Collaboration in Education</td>
<td>3</td>
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<tr>
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<td>Settings</td>
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<td>TLED 326</td>
<td>Socio-Cultural Perspectives in Education</td>
<td>3</td>
</tr>
<tr>
<td>TLED 425</td>
<td>Creating and Managing Learning</td>
<td>3</td>
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<td></td>
<td>Environments</td>
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<tr>
<td>TLED 426</td>
<td>Introduction to Literacy Research, Theory</td>
<td>3</td>
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<tr>
<td></td>
<td>and Practice in the Classroom</td>
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<tr>
<td>TLED 430W</td>
<td>PK-12 Instructional Technology (satisfies</td>
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<tr>
<td></td>
<td>Impact of Technology requirement)</td>
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**Major Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>GEOG 100S</td>
<td>Cultural Geography</td>
<td>3</td>
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<tr>
<td>LIBS 110G</td>
<td>Information Literacy for the Digital Age</td>
<td>3</td>
</tr>
<tr>
<td>STAT 130M</td>
<td>Elementary Statistics</td>
<td>3</td>
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<tr>
<td>HPE 327</td>
<td>Teaching of Health and Physical Education,</td>
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<tr>
<td></td>
<td>Pre-K-8</td>
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<tr>
<td>MATH 302</td>
<td>Geometry</td>
<td>3</td>
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<tr>
<td>TLED 320</td>
<td>Perspectives on the Young Child and the Family</td>
<td>3</td>
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<tr>
<td>TLED 328</td>
<td>Observation and Assessment in Early Childhood</td>
<td>3</td>
</tr>
<tr>
<td>TLED 330</td>
<td>The Arts in Early Childhood and Elementary</td>
<td>3</td>
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<tr>
<td></td>
<td>Education</td>
<td></td>
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<tr>
<td>TLED 337</td>
<td>Literature for Young Children</td>
<td>3</td>
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<tr>
<td>TLED 338</td>
<td>Integrated Methods &amp; Curriculum in Early</td>
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<tr>
<td></td>
<td>Childhood Ed: Birth-Pre-K</td>
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<tr>
<td>TLED 483</td>
<td>Seminar in Teacher Education ****</td>
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<tr>
<td>TLED 487</td>
<td>Teacher Candidate Internship for Early Childhood Education ****</td>
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<tr>
<td>TLED 492</td>
<td>Integrating Instruction: Mathematics and Science Across the Early Childhood Curriculum</td>
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<tr>
<td>TLED 493</td>
<td>Integrating Literacy and Social Studies Across the PreK-3 Curriculum</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours** 109-115

* 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.

**Upper-Division General Education**

Satisfied in the major.

**Four-Year Plan - BS in Early Childhood Education**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Bachelor of Science in Elementary Education**

Judith Dunkerly-Bean, Undergraduate Program Director

The BS in Elementary Education draws courses from across the University to prepare teacher candidates interested in teaching elementary education. Course work spans the disciplines of English literature and composition; history; fine and performing arts; mathematics; natural sciences; social sciences; human growth and development; and educational foundations, technology, assessment, theory, and methods. The broad curriculum, along with the admittance, continuance, and graduation requirements described below, prepares teacher candidates to meet state license standards for the Commonwealth of Virginia, including passing scores on the Reading for Virginia Educators Assessment and the Virginia Communication and Literacy Assessment.

Core coursework is available in both online and face-to-face formats. Additional information is posted on the department's website or available in hard copy from the department.
Declaration of Major
To declare the major, teacher candidates must have a 2.75 cumulative grade point average and grades of C- or above in any course required in the program (except ENGL 110C and ENGL 211C, which require a C), pass the prescribed Virginia Board of Education assessment for admission to an approved teacher education program as described herein, and complete 26 credit hours. Teacher candidates who have been admitted to the BS in Elementary Education program but who are ineligible to declare the major will be advised as intended 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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, http://www.odu.edu/oece and review the Professional Education Handbook.

Admission to Undergraduate Teacher Education Program
All teacher candidates must be admitted to the elementary education program as a requirement of continuance and graduation. Admission to the elementary education program requires that the teacher candidate:

1. Be a declared BS in elementary education student.
2. Have a cumulative GPA of 2.75.
3. Have a 2.75 GPA in general education courses.
4. Have a 2.75 GPA in core courses.
5. Have a 2.75 GPA in major courses.
6. Have no grade below a C- in any course required in the program.
7. Submit an application for admittance that is approved by the program and the Darden College of Education and Professional Studies.

Additionally, teacher candidates should be admitted to the elementary education program by the end of their 60th credit hour. Transfer students with 60 or more credits should be admitted to the elementary 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 2.75, 2.75 major GPA, 2.75 general education GPA, and 2.75 core GPA.
2. Earn a grade no less than C- in all departmental requirements, major courses, and core courses.
3. Successfully complete a background clearance check.

Background Clearance Requirement: Old Dominion University requires a background clearance check of candidates interested in professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes the FBI fingerprint SP-24 form, the child protective service/social service check, and the sexual offender registry check. Candidates interested in professional education programs are advised to complete this clearance process immediately upon entry since the clearance process takes a minimum of eight weeks to complete. Please contact the Office of Clinical Experiences at 757-683-3348 with any questions.

Teacher candidates who fail to meet program requirements for two consecutive semesters will be encouraged to consider other academic and professional goals.

Additionally, passing scores on the Praxis Multiple Subject Assessment for Elementary Education, Virginia Communication and Literacy Assessment and Reading for Virginia Educators are required prior to TLED 485. Test results will be submitted to the director of the Office of Clinical Experiences. 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 departmental requirements (C in ENGL 110C and ENGL 211C), major courses, and core courses.
3. Have a minimum cumulative grade point average of 2.75 and 2.75 major GPA.
4. Pass the writing intensive (W) course in the major with a grade of C or higher.
5. Complete the Senior Assessment Survey and the Departmental Senior Exit Survey.
6. Submit a professional portfolio according to Darden College of Education and Professional Studies and program requirements.

Due to changing University requirements, national accreditation standards, and Commonwealth of Virginia licensure regulations, the programs in the Darden College of Education and Professional Studies 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 and Professional Studies website at https://www.odu.edu/eps.

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Requirements*

** Lower-Division General Education

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>English Composition (C or better required)</td>
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<tr>
<td>ENGL 211C</td>
<td>English Composition (C or better required)</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture (See Requirements for Undergraduate Degrees section of this Catalog for requirement)</td>
<td>0-6</td>
<td></td>
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<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Communication (COMM 101R or COMM 103R required)</td>
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<tr>
<td>Information Literacy and Research (met in the major with LIBS 110G)</td>
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<tr>
<td>Human Creativity</td>
<td></td>
<td>3</td>
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<tr>
<td>Literature</td>
<td></td>
<td>3</td>
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<tr>
<td>Interpreting the Past (HIST 104H required)</td>
<td>3</td>
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<tr>
<td>Human Behavior (PSYC 203S required)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Impact of Technology (met in the major)</td>
<td>3</td>
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</tr>
<tr>
<td>MATH 102M</td>
<td>College Algebra **</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 103M</td>
<td>College Algebra with Supplemental Instruction</td>
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<tr>
<td>Philosophy and Ethics (PHIL 110P or PHIL 230E required)</td>
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<tr>
<td>Nature of Science **</td>
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<tr>
<td>BIOL 105N</td>
<td>Biology for Nonscience Majors I</td>
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or BIOL 106N  Biology for Nonscience Majors II
or BIOL 110N/111N  Environmental Sciences
or BIOL 112N/113N  Environment and Man
or BIOL 117N/118N  Introduction to Human Biology
or BIOL 121N/122N  General Biology I

An additional four-credit lab science (N course) from a different discipline

Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>FOUN 301</td>
<td>Learning and Development</td>
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<tr>
<td>FOUN 302</td>
<td>Assessment of Learning</td>
<td>3</td>
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<tr>
<td>TLED 315</td>
<td>Foundations of Education: Historical and Contemporary Issues ***</td>
<td>3</td>
</tr>
<tr>
<td>TLED 325</td>
<td>Communication and Collaboration in Education Settings</td>
<td>3</td>
</tr>
<tr>
<td>TLED 326</td>
<td>Socio-Cultural Perspectives in Education</td>
<td>3</td>
</tr>
<tr>
<td>TLED 425</td>
<td>Creating and Managing Learning Environments</td>
<td>3</td>
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<tr>
<td>TLED 426</td>
<td>Introduction to Literacy, Theory and Practice in the Classroom</td>
<td>3</td>
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<tr>
<td>TLED 430W</td>
<td>PK-12 Instructional Technology (satisfies Impact of Technology requirement)</td>
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Major Courses

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GEOG 100S</td>
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<tr>
<td>LIBS 110G</td>
<td>Information Literacy for the Digital Age</td>
<td>3</td>
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<tr>
<td>STAT 130M</td>
<td>Elementary Statistics</td>
<td>3</td>
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<tr>
<td>MATH 302</td>
<td>Geometry</td>
<td>3</td>
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<td>STEM 433</td>
<td>Developing Instructional Strategies PreK-6: Mathematics</td>
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<tr>
<td>STEM 434</td>
<td>Developing Instructional Strategies PreK-6: Science</td>
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<td>TLED 330</td>
<td>The Arts in Early Childhood and Elementary Education</td>
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<td>TLED 432</td>
<td>Developing Instructional Strategies PreK-6: Language Arts</td>
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<td>TLED 435</td>
<td>Developing Instructional Strategies PreK-6: Social Studies</td>
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<td>TLED 478</td>
<td>Integrating Instruction Across the Curriculum PreK-6</td>
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<td>TLED 479</td>
<td>Classroom Management and Practice PreK-3; PreK-6</td>
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<td>Seminar in Teacher Education</td>
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<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship ****</td>
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Total Hours 105-111

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.

Departmental requirements for all teacher candidates, not met by the associate degree.

LiveText is required for all Teacher Education majors and minors upon registration for TLED 315.

Passing scores on the Reading for Virginia Educators Assessment and Virginia Communication and Literacy Assessment are required prior to TLED 485.

Upper-Division General Education
Satisfied in the major.

Four-Year Plan - BS in Elementary Education (http://catalog.odu.edu/undergraduate/dardencollegeofeducation/teachinglearning/elementary-bsed-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Teacher Education, Secondary Undergraduate Programs - Mathematics and Science

MonarchTeach Program

The following program is for students graduating in spring 2017 and beyond.

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 Professional Studies 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 “Explore Teaching” through Step 1 and Step 2, both one-credit, field-based 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 Professional Studies 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). Students can officially apply to the MonarchTeach program after completion of the Step 2 course (STEM 102). When applying to the program, students must fill out the appropriate paperwork provided by the MonarchTeach program and go through the interview process in the Office of Teacher Education Services. 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 Core Academic Skills Test or equivalent SAT or ACT scores as established by the Virginia Board of Education, as well as passing scores on the appropriate PRAXIS Content Test and the Virginia Communication and Literacy Assessment, and have passed the final teaching portfolio review.

Background Clearance Requirement
Old Dominion University requires a background clearance check of candidates interested in any field-based professional education course.
The background clearance must be successfully completed prior to any field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates must complete this clearance process immediately in the first field-based course since the clearance process takes a minimum of eight weeks to complete.

### Course Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM 101</td>
<td>Step 1 – Inquiry Approaches to Teaching STEM (field based)</td>
<td>1</td>
</tr>
<tr>
<td>STEM 102</td>
<td>Step 2 - Inquiry Based STEM Lesson Design (field based)</td>
<td>1</td>
</tr>
<tr>
<td>STEM 201</td>
<td>Knowing and Learning in STEM Education</td>
<td>3</td>
</tr>
<tr>
<td>STEM 202</td>
<td>Classroom Interactions in STEM Education (field based)</td>
<td>3</td>
</tr>
<tr>
<td>STEM 401</td>
<td>Project Based Instruction in STEM Education (field based)</td>
<td>3</td>
</tr>
<tr>
<td>STEM 402</td>
<td>Perspectives on STEM</td>
<td>3</td>
</tr>
<tr>
<td>SCI 468</td>
<td>Research Methods in Math and Sciences</td>
<td>3</td>
</tr>
<tr>
<td>or BIOL 468W</td>
<td>Research Methods in Mathematics and Science</td>
<td>3</td>
</tr>
<tr>
<td>or CHEM 468</td>
<td>Research Methods in Mathematics and Science</td>
<td>3</td>
</tr>
<tr>
<td>or OEAS 468W</td>
<td>Research Methods in Math and Sciences</td>
<td>3</td>
</tr>
<tr>
<td>STEM 485</td>
<td>Apprentice Teaching (field based)</td>
<td>9</td>
</tr>
</tbody>
</table>

**Total Hours**: 26

Mathematics education students in the MonarchTeach program must also complete MATH 375 Advanced Concepts for Secondary Educators: Function and Modeling.

### Program Requirements

Upon completion of Step 2 (STEM 102) students are encouraged to apply to the teacher preparation program MonarchTeach. Students who wish to teach science or mathematics at the secondary level must pursue courses of study leading to baccalaureate degrees in the College of Sciences. (See the College of Sciences section of this Catalog for full and specific requirements in science and mathematics secondary education.) In addition, to be eligible for state licensure to teach in secondary schools, students must complete requirements in the Darden College of Education and Professional Studies listed below.

### Admission

Students must:

Old Dominion University students seeking admission to an approved teacher education program must have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

1. Have an overall grade point average of 2.75 and a 2.75 in the academic major and the professional education core with no individual grade in content courses below C (except C+ for MATH 211 and MATH 212 for mathematics majors), C- (physics majors), C (earth science majors), C (chemistry majors with all other science courses a C- or better), and C (biology majors with other science courses a C- or better);
2. Meet with the MonarchTeach program advisor to submit the program application to the director of Teacher Education Services. (The application forms may be obtained on the MonarchTeach web page under Resources for Students.)
3. Accept a recommendation letter for teacher education before completing STEM 202 Classroom Interactions.

### 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 all professional education courses and field experiences;
3. Be approved for Apprentice Teaching by the faculty;
4. Pass the VCLA; and
5. Pass Praxis Content Test in order to participate in Apprentice Teaching. Passing scores must be attached to the Apprentice Teaching 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 Apprentice Teaching and Seminar;
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- will be accepted toward meeting requirements in the Darden College of Education and Professional Studies.

### 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. 96) or the College of Sciences (p. 286) 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 and Professional Studies.

### 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. Submit to the Office of Clinical Experiences an application form containing recommendations from two faculty members familiar with their work. (These forms may be obtained either in the Office of Clinical Experiences 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 and Professional Studies. Students should be formally admitted to teacher education before taking:
Developing Instructional Strategies for Teaching in the Middle/High School: English 3

Developing Instructional Strategies for Teaching in the Middle/High School: Social Studies 3

Developing Instructional Strategies for Teaching in the Middle/High School: Mathematics 3

Developing Instructional Strategies for Teaching in the Middle/High School: Science 3

Continuance

Students must:

Old Dominion University students seeking admission to an approved teacher education program must have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

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 the Praxis Subject Assessment in order to participate in the teacher internship. Passing scores must be attached to the teacher internship application.

6. A clearance background check must be completed prior to placement in a field experience required for any observation and practicum courses and for the teacher candidate internship. For more information please review the clearance background check policy on the Office of Clinical Experiences website at https://www.odu.edu/ocel.

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 and Professional Studies.

Professional Education Course Requirements—Secondary

Art Education

(Art this program leads to Licensure, K-12)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment</td>
<td>3</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
<tr>
<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 305</td>
<td>Elementary Art Education Methods and Classroom Management</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 406</td>
<td>Secondary Art Education Methods and Classroom Management</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 407</td>
<td>Art Education Practicum</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 408</td>
<td>Student Teaching Seminar</td>
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</tr>
<tr>
<td><strong>Total Hours</strong></td>
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Dance Education

(This program leads to Licensure, K-12)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment</td>
<td>3</td>
</tr>
<tr>
<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>TLED 430W</td>
<td>PK-12 Instructional Technology</td>
<td>3</td>
</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
<tr>
<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
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</tr>
<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
<td>3</td>
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<tr>
<td>EXSC 240</td>
<td>Prevention and Care of Injuries Related to Physical Activity</td>
<td>3</td>
</tr>
<tr>
<td>HPE 222</td>
<td>Teaching Individual Sports and Dance</td>
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English Education

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment</td>
<td>3</td>
</tr>
<tr>
<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>TLED 430W</td>
<td>PK-12 Instructional Technology</td>
<td>3</td>
</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
<tr>
<td>TLED 483</td>
<td>Seminar in Teacher Education</td>
<td>1</td>
</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
<tr>
<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td>33</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment</td>
<td>3</td>
</tr>
<tr>
<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>TLED 430W</td>
<td>PK-12 Instructional Technology</td>
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</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
<tr>
<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
<td>3</td>
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<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
<td>3</td>
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<tr>
<td>FL 452</td>
<td>Methods for Teaching Foreign Languages in Pre-K through Grade 12</td>
<td>3</td>
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<tr>
<td>FL 456</td>
<td>Seminar in Foreign Language Teacher Education</td>
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History/Social Sciences Education

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<tr>
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<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment</td>
<td>3</td>
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Old Dominion University 230
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>TLED 430W</td>
<td>PK-12 Instructional Technology</td>
<td>3</td>
</tr>
<tr>
<td>TLED 455</td>
<td>Developing Instructional Strategies for Teaching in the Middle/High School: Social Studies</td>
<td>3</td>
</tr>
<tr>
<td>TLED 483</td>
<td>Seminar in Teacher Education</td>
<td>1</td>
</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
<tr>
<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
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</table>

**Total Hours: 33**

**Music Education**

(This program leads to Licensure K-12)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment of Education</td>
<td>3</td>
</tr>
<tr>
<td>TLED 360</td>
<td>Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>TLED 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>TLED 485</td>
<td>Teacher Candidate Internship</td>
<td>12</td>
</tr>
<tr>
<td>SPED 313</td>
<td>Fundamentals of Human Growth and Development: Birth through Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
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Select one of the following concentrations: **6**

**Vocal**

<table>
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<th>Course Title</th>
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<tbody>
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<td>Music Education: Elementary Vocal and General Methods</td>
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<tr>
<td>MUSC 402</td>
<td>Music Education: Practicum (Elementary Vocal and General)</td>
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</tr>
<tr>
<td>MUSC 403</td>
<td>Music Education: Secondary Vocal Methods</td>
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</tr>
<tr>
<td>MUSC 404</td>
<td>Music Education: Practicum (Secondary Vocal)</td>
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**Instrumental**

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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUSC 401</td>
<td>Music Education: Elementary Vocal and General Methods</td>
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</tr>
<tr>
<td>MUSC 402</td>
<td>Music Education: Practicum (Elementary Vocal and General)</td>
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</tr>
<tr>
<td>MUSC 407</td>
<td>Music Education: Secondary Instrumental Methods</td>
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</tr>
<tr>
<td>MUSC 408</td>
<td>Music Education: Practicum (Secondary Instrumental)</td>
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</table>

**Total Hours: 32**

**Theatre Education**

(This program leads to Licensure K-12)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLED 301</td>
<td>Foundations and Introduction to Assessment of Education</td>
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<tr>
<td>SPED 406</td>
<td>Students with Diverse Learning Needs in the General Education Classroom</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours: 29**

**Add-on Endorsements**

Add-on endorsements are available in algebra 1, English as a second language, journalism, and most other grade 6-12 areas. For information, please contact the Office of Clinical Experiences, website at https://www.odu.edu/oce.

**Teacher Education**

**Teacher Education**

Old Dominion University's Professional Educator Program is a collaborative effort between the Darden College of Education and Professional Studies, the College of Arts and Letters, and the College of Sciences. The major purpose in its teacher education programs is to prepare teachers 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 that reflect commitment to teaching and learning as well as lifelong professional growth and development.

For academic advising, contact Career and Advising Resource Center (CARC) and appropriate departmental offices in the Darden College of Education and Professional Studies, the College of Arts and Letters, and the College of Sciences.

**Baccalaureate Teacher Education Programs**

- Students interested in teaching art, dance, English, world languages, music, social studies, or theatre, refer to the College of Arts & Letters section of this Catalog.
- If you are interested in teaching biology, chemistry, computer science, Earth science, physics, or math, refer to the College of Sciences section of this Catalog.
- Students interested in teaching elementary education PreK-6 (B.S. in Elementary Education) or early childhood education PreK-3 (B.S. in Early Childhood Education), refer to the Department of Teaching & Learning in the Darden College of Education and Professional Studies, pending SCHEV approval.
- Students interested in teaching special education, refer to the Department of Communication Disorders and Special Education in the Darden College of Education and Professional Studies, pending SCHEV approval.
- Students interested in teaching marketing or technology education (B.S. in Career and Technical Education), refer to the Department of STEM Education and Professional Studies in the Darden College of Education and Professional Studies, pending SCHEV approval.
- Students interested in teaching health and physical education (B.S. in Physical Education), refer to the Department of Human Movement Sciences in the Darden College of Education and Professional Studies.

**Admission, Continuance, and Exit Requirements for Baccalaureate Approved Teacher Education Programs**

Admission to Old Dominion University does not guarantee admission to a degree and/or a teacher preparation program in the student's specific area of interest. 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 Old Dominion University departmental criteria. These criteria include course work, 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:

1. Have a completed Clearance Background Check as specified in this section of the Catalog;
2. Have a minimum 2.75 grade point average overall (or as outlined in the specific curriculum), in the major, and in the content and professional education core courses;
3. Have at least a grade of C or C- (depending on the program) in all courses specified in the major curriculum to include content and professional education core courses;

4. Have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT); and

5. Provide authorization for the release of any disciplinary action that is contained in student records upon application;

Although students may enroll in a limited number of education courses, the following requirements must be on file in the Office of Clinical Experiences prior to enrolling in any professional education practicum course: 1) admission into the teacher education program; 2) completed Praxis Core or approved equivalent tests; 3) professional education survey; and 4) the completed clearance background check process.

Continuance

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.

To continue in the respective teacher education program, the student must:

1. Maintain a 2.75 minimum grade point average overall (or as outlined in the specific curriculum), in the major and in the content and professional education core courses;

2. Continue to earn at least a grade of C or C- (depending on the program) in all courses specified in the major curriculum to include content and professional education core courses for continuance in the teacher education program;

3. Have submitted Praxis Core or equivalent test of mathematics, reading, and writing; and

4. Have achieved 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 orientation.

Score reports for all examinations must be on file in the Office of Clinical Experiences in room 2345 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 Office of Clinical Experiences website (https://www.odu.edu/oce) and review the required assessments.

Prior to placement in early field experiences, practica and/or internships, students are required to have a completed Clearance Background Check search, which consists of: National Criminal Background Check for Employee or Volunteer Providing Care to Children, the Elderly and Disabled (SP-24 Form), the Child Protective Service’s Central Registry Release of Information (032-02-1515-11-eng, 02/14), a fingerprint check using the APPLICANT FD258 (REV 3-1-10) 1110-0046 fingerprinting card, and the National Sex Offender Registry and/or the Virginia State Police: Sex Offender Registry search. Students are liable for all costs incurred. Visit the Office of Clinical Experiences website (https://www.odu.edu/oce) for more information.

Exit

Students must have:

1. A minimum 2.75 grade point average overall (or as outlined in the specific curriculum), in the major, and in the content and the professional education core courses;

2. Achieved grades of C or C- (as determined by the specific academic department) in all courses specified in the major curriculum to include content and professional education core courses;

3. Earned a passing grade in student teaching; and

4. Completed the senior assessment.

The Virginia Department of Education requires all initially licensed teachers, school counselors, administrators, and other school personnel to demonstrate proficiency in the use of educational technology for instruction; study in dyslexia; study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Virginia Board of Education; and training or certification in emergency first aid, cardiopulmonary resuscitation, and the use of automated external defibrillators.

Due to changing University requirements, national accreditation standards, and Commonwealth licensure regulations, the programs in the Darden College of Education and Professional Studies 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 and Professional Studies website at www.education.odu.edu.

For more information on requirements in specific programs, students should refer to the individual program listings in this catalog or contact the Office of Clinical Experiences or the appropriate academic department in the College of Arts and Letters (p. 96), the College of Sciences (https://www.odu.edu/sci/prospective/undergrad), or the Darden College of Education and Professional Studies (http://www.odu.edu/education/departments).

Teacher Candidate Dispositions

All teacher candidates are expected to demonstrate behaviors that are indicative of the following dispositions characteristic of effective educators. All candidates will be assessed a minimum of three times throughout their program, including entry. Any teacher candidate who is not displaying these dispositions will be subject to the disposition policy found at Office of Clinical Experiences website. Demonstrated professional dispositions are expected for continuance in the program.

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 subject assessment passing score approved by the Virginia Board of Education; and

3. Reading for Virginia Educators (RVE). The passing score required for prek-3, prek-6, and k-12 special education general curriculum endorsement is 157. The required passing score for Reading Specialist is 162. These required passing scores were implemented July 1, 2011 by the Virginia Department of Education.

For the most current information on the prescribed Virginia Board of Education professional assessments for each individual passing score, visit the Office of Clinical Experiences website, and review the Required Assessments.

Post-Baccalaureate Endorsement Teacher Education Programs

The Post-Baccalaureate Endorsement program is an approved teacher education program for individuals who have completed a bachelor's degree from a regionally accredited institution and wish to qualify for a Virginia teaching license. Students applying for admission into this approved teacher education program are considered graduate non-degree status and must meet the college's requirements for admitting students into an approved program.
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 and Professional Studies. Program sheets for the Post-Baccalaureate Endorsement programs are available in the Office of Clinical Experiences.

Admission, Continuance and Exit Requirements for Post-Baccalaureate Teacher Education Programs

Admission

Students seeking admission into the post-baccalaureate endorsement program must:

1. apply for admission to Old Dominion University as graduate non-degree seeking student
2. have achieved an overall GPA of 2.75-2.80 (as outlined in the specific curriculum);
3. have earned a grade of C or C- (as determined by the specific academic department);
4. Have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT);
5. interview with and receive recommendation for admittance from a department representative, or distance learning representative;
6. submit the Post-Baccalaureate Endorsement Program Application;
7. be aware that only 12 hours of professional education courses from another institution may transfer into a post-baccalaureate endorsement program and that practicum and/or student teaching courses are not eligible for transfer;
8. complete the professional dispositions self-survey;
9. attach the completed authorization for the release of any disciplinary action on file with the Office of Student Conduct and Academic Integrity.

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 graduate non-degree seeking student;
2. have achieved an overall GPA of 2.5-2.74 in the baccalaureate degree official transcript;
3. have earned a grade of C or C- (as determined by the specific academic department);
4. Have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT);
5. interview with and receive recommendation for admittance from a department representative, or distance learning representative;
6. submit the Post-Baccalaureate Endorsement Program Application;
7. be aware that only 12 hours of professional education courses from another institution may transfer into a post-baccalaureate endorsement program and that practicum and/or student teaching courses are not eligible for transfer;
8. complete the professional dispositions self-survey;
9. attach the completed authorization for the release of any disciplinary action on file with the Office of Student Conduct and Academic Integrity.

Students who wish to apply to a graduate program while in the post-baccalaureate endorsement program must meet all graduate program entry requirements. Only 12 credit hours of professional education course work from a post-baccalaureate endorsement program will transfer into a graduate program.

In order to student teach, all approved teacher education program requirements must be completed, to include all content and professional education course work with the appropriate grade and GPA as outlined in the respective curriculum and passing scores on Praxis II, the Virginia Communication and Literacy Assessment (VCLA), and the Virginia Reading Assessment (if required by the program).

Continuance

To continue in the respective post-baccalaureate teacher education program, the student must:

1. Maintain a 2.75-2.80 minimum grade point average overall (or as outlined in the specific curriculum), in the major and in the content and professional education core courses;
2. Maintain a 3.0 minimum grade point average overall (or as outlined in the specific curriculum), in the major and in the content and professional education core courses;
3. Continue to earn at least a grade of C or C- (depending on the program) in all courses specified in the major curriculum to include content and professional education core courses for continuance in the teacher education program;
4. Have achieved passing Praxis Core or equivalent test scores prescribed by the Virginia Board of Education assessment for admission to an approved teacher education program; and
5. Have achieved 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 orientation.

Score reports for all examinations must be on file in the Career and Academic Resource Center and Office of Clinical Experiences. 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 Office of Clinical Experiences website and review the required assessments.

Prior to placement in early field experiences, practica and/or internships, students are required to have a completed Clearance Background Check search, which consists of: National Criminal Background Check for Employee or Volunteer Providing Care to Children, the Elderly and Disabled (SP-24 Form), the Child Protective Service’s Central Registry Release of Information (032-02-1515-11-eng, 02/14), a fingerprint check using the APPLICANT FD258 (REV 3-1-10) 1110-0046 fingerprinting card, and the National Sex Offender Registry and/or the Virginia State Police: Sex Offender Registry search. Students are liable for all costs incurred.

Exit

Students must have:

1. For undergraduate post-baccalaureate teacher education programs, maintain a 2.75 minimum grade point average overall (or as outlined in the specific curriculum), in the major and in the content and professional education core courses;
2. Maintain a 3.0 minimum grade point average overall (or as outlined in the specific curriculum), in the major and in the content and professional education core courses;
3. Achieved grades of C or C- (as determined by the specific academic department) in all courses specified in the major curriculum to include content and professional education core courses; and
4. Earned a passing grade in student teaching.

The Virginia Department of Education requires all initially licensed teachers, school counselors, administrators, and other school personnel to demonstrate proficiency in the use of educational technology for instruction; study in dyslexia; study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Virginia Board of Education; and training or certification in emergency first aid, cardiopulmonary resuscitation, and the use of automated external defibrillators.

Due to changing University requirements, national accreditation standards, and Commonwealth licensure regulations, the programs in the Darden College of Education and Professional Studies 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 and Professional Studies website at www.education.odu.edu.
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**Prescribed Virginia Board of Education Professional Assessments for Licensure**

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Frank Batten College of Engineering and Technology

Web Site: http://www.odu.edu/eng

Ben Stuart, Interim Dean
Khan Iftekharuddin, Associate Dean for Research and Graduate Studies
Rafael Landaeta, Associate Dean for Undergraduate Education
Carol Considine, Assistant Dean for Outreach
Tony Dean, Assistant Dean for Research

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 Development Services

Engineering and technology graduates get a head start on the engineering job market by preparing academically and experientially for their engineering and technology careers. Students receive direct assistance in locating full- and part-time employment including co-op and internship opportunities through the college’s Career Development Services 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.

Linked 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. 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 (P.E.) 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).

For further information, please visit the college’s web site: http://www.odu.edu/eng.

Programs of Study

Bachelor's (Majors)

Engineering Programs:

- Civil
- Computer
- Electrical
- Mechanical
- Modeling & Simulation

Engineering Technology:

- Civil (CET)
- Electrical (EET)
- Mechanical (MET)

Minors:

- Minor in Aerospace Engineering (Department of Mechanical and Aerospace Engineering)
- Minor in Biomedical Engineering (Interdisciplinary, Department of Electrical and Computer Engineering)
- Minor in Civil Engineering (Department of Civil and Environmental Engineering)
- Minor in Civil Engineering Technology-Construction (Department of Engineering Technology)
- Minor in Computer Engineering (Department of Electrical and Computer Engineering)
- Minor in Cybersecurity (Interdisciplinary, see details below)
- Minor in Electrical Engineering (Department of Electrical and Computer Engineering)
- Minor in Electrical Engineering Technology (Department of Engineering Technology)
- Minor in Energy Engineering (Interdisciplinary, see details below)
Accreditation

The following are engineering programs accredited by the Engineering Accreditation Commission of ABET www.abet.org (http://www.abet.org):

- 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

The following are engineering technology programs accredited by the Engineering Technology Accreditation Commission ABET www.abet.org (http://www.abet.org):

- Bachelor of Science in Engineering Technology - Civil Engineering Technology
- Bachelor of Science in Engineering Technology - Electrical Engineering Technology
- Bachelor of Science in Engineering Technology - Mechanical Engineering Technology

The following program is certified by the American Society for Engineering Management www.asem.org (http://www.asem.org):

- Master of Engineering Management

Collaborative Programs

Commonwealth Graduate Engineering Program (CGEP)

Linda Vahala, Director

The Commonwealth Graduate Engineering Program (CGEP) is a unique cooperative agreement. This agreement is among the five largest engineering schools in the Commonwealth of Virginia: Old Dominion University, George Mason University, the University of Virginia, Virginia Commonwealth University and Virginia Polytechnic Institute and State University. The program was developed in response to the diverse continuing education needs of engineering graduates working in industry and government.

Graduate engineering courses leading to a Master of Science or Master of Engineering degree or nanotechnology certificate are offered through these universities via a statewide interactive distance-learning network.

Students seeking admission to the various degree programs should request and process their applications through the Commonwealth Graduate Engineering Program Office in the Batten College of Engineering and Technology at Old Dominion University: https://www.odu.edu/eng/programs/ceg.

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: VMASC (the Virginia Modeling, Analysis and Simulation Center) and Bioelectrics. One that has been transferred to the Commonwealth is MARS (the Mid-Atlantic Regional Spaceport).

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.

National Center for System of Systems Engineering (NCSOSE)

Charles Keating, Director

NCSOSE 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

To be named, 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/eng/bioelectrics/.

Master’s

Engineering Programs:

- Aerospace
- Biomedical
- 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

Accreditation

The following are engineering programs accredited by the Engineering Accreditation Commission of ABET www.abet.org (http://www.abet.org):

- 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

The following are engineering technology programs accredited by the Engineering Technology Accreditation Commission ABET www.abet.org (http://www.abet.org):

- Bachelor of Science in Engineering Technology - Civil Engineering Technology
- Bachelor of Science in Engineering Technology - Electrical Engineering Technology
- Bachelor of Science in Engineering Technology - Mechanical Engineering Technology

The following program is certified by the American Society for Engineering Management www.asem.org (http://www.asem.org):

- Master of Engineering Management

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Virginia Modeling, Analysis, and Simulation Center (VMASC)
Eric Weisel, Interim Director
VMASC is a multi-disciplinary research center of Old Dominion University. Working with more than one hundred 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.

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: Gangfeng Ma.

Naval Systems and Marine Engineering Institute (NEMSI) was founded in 2014 with the vision to build a robust, sustainable center of excellence that supports the Naval Enterprise and Marine Industry in research and professional workforce development. NEMSI’s mission is to: (1) expand Old Dominion University’s research capabilities to assist the Navy and industry in addressing complex challenges in design, construction, operations and modernization of marine vessels for military, commercial and recreational use and (2) promote curriculum and lab advancements, faculty-student research at the undergraduate and graduate level, and student engagement and retention initiatives to produce an engineering workforce that meets the national competitive needs of the navy and marine industry constituencies. Director: Jennifer Michaeli.

Plasma Engineering and Medicine Institute is focused on conducting fundamental and applied investigations using Laser and Plasma Technologies. It offers state-of-the-art equipment and a vibrant academic environment where faculty, graduate and undergraduate students engage together in advanced research encompassing fundamental and applied research aspects in the field of cold plasmas, and its applications in engineering and medicine. Director: Mounir Laroussi.

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.

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.

Virginia Institute for Photovoltaics research spans from the Nanoscale (Fundamental Sciences and Engineering) through the Devices and balance of systems, to the deployment of Gigascale commercial power generation. The current focus is to research and develop the Science and Engineering of Photovoltaic Devices (or Solar cells) and bring them from the laboratory to the industry. Director: Sylvain Marsillac.

Virginia Institute for Vision Analysis aims to leverage complimentary expertise of faculty in computer vision, signal/image processing and machine learning to become one of the leading institutes in the field. Research focuses on novel theory, state-of-art algorithms, architectures, real-time implementations for biomedical engineering, human# and machine#centric recognition, environmental and geoscience applications and computeraided medical diagnosis systems. Director: Khan Iftekharuddin.

Special Programs
Cooperative Education/Internships 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 may be 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 and internships.

Linked 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 a linked program can count up to six credit hours of course work towards both the undergraduate and the graduate degrees. Full-time students may be able to complete the requirements for the bachelor's degree in four years and the master's degree in one additional year. Students in linked programs must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree).

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 a linked doctoral program that enables students to be admitted directly into the Ph.D. program upon completion of the baccalaureate degree. A select number of exceptionally well-qualified students can be admitted to the Bachelor/Ph.D. program in their junior year while they are pursuing 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 linked 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. For linked bachelor's to doctoral programs, students must earn a minimum of 198 credit hours (120 for the undergraduate degree and 78 for the graduate degree). 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.
Interdisciplinary Minor - Cybersecurity
Saltuk Karahan, Department of Political Science and Geography, Coordinator (skarahan@odu.edu)

This interdisciplinary minor in cybersecurity is focused on the technological, structural, social, and legal frameworks used to secure computer networks and software. The study of cybersecurity combines multiple fields including computer science, engineering, information technology, criminal justice, and philosophy, to name a few. In an effort to promote the security of computer networks, software, and cyber information, an interdisciplinary understanding about technological, legal, philosophical, and structural aspects of cyber crime is needed. This minor will provide students from different majors the knowledge they need to prevent or respond to cyber incidents they are likely to encounter in their careers.

Course options are as follows:

CRJS 405 Cybercrime and Cybersecurity 3
CS 462 Cybersecurity Fundamentals 3
or ECE/MSIM 470 Foundations of Cyber Security
CS 463 Cryptography for Cybersecurity 3
CS 464 Networked Systems Security 3
or ECE/MSIM 411 Networked System Security
CS 465 Information Assurance 3
CYSE 300 Introduction to Cybersecurity 3
CYSE 301 Cybersecurity Techniques and Operations 3
CYSE 406 Cyber Law 3
CYSE 407 Digital Forensics 3
ECE 416 Cyber Defense Fundamentals 3
or MSIM 416 Cyber Defense Fundamentals
ECE 417 Secure and Trusted Operating Systems 3
or MSIM 417 Secure and Trusted Operating Systems
ECE 419 Cyber Physical System Security 3
or MSIM 419 Cyber Physical System Security
FIN 443 Enterprise Risk Management 3
IT 416 Network Server Configuration and Administration 3
IT 417 Management of Information Security 3
IT 418 Information Assurance 3
IT 419 Enterprise Cyber Defense 3
IT 461 Implementing Internet Applications 3
PHIL 355E Cybersecurity Ethics 3

The interdisciplinary minor in cybersecurity 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 prerequisites and corequisites. 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 be used as a minor course with the approval of the minor coordinator.

For completion of the minor, students must have a minimum overall grade point average of 2.00 in all courses required for the minor exclusive of prerequisites. At least six hours of the required 12 must be taken through courses offered by Old Dominion University.

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.

The minor in global 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 minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisites. 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 be used as a minor course with the approval of the minor coordinator.

For completion of the minor, students 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 in upper-level
courses in the minor requirement through courses offered by Old Dominion University.

**Undergraduate Programs**
The Bachelor of Science in Civil Engineering, the Bachelor of Science in Computer Engineering, the Bachelor of Science in Electrical Engineering, the Bachelor of Science in Mechanical Engineering and the Bachelor of Science in Mechanical and Aerospace Engineering are accredited by the Engineering Accreditation Commission (EAC) of ABET, http://www.abet.org.

The Bachelor of Science in Engineering Technology has programs in civil engineering technology, electrical engineering technology, and mechanical engineering technology that are accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET, http://www.abet.org.

**Engineering Fundamentals Division**
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: https://www.odu.edu/efd.

**Engineering Fundamentals—Engineering Programs**
The following courses are to be taken Freshman year.

**Freshman First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGN 110</td>
<td>Explore Engineering and Technology</td>
<td>2</td>
</tr>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 122N</td>
<td>Foundations of Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 110C</td>
<td>English Composition (grade of C or better required)</td>
<td>3</td>
</tr>
<tr>
<td>GEN ED - Way of Knowing</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
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</table>

**Freshman Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 111</td>
<td>Information Literacy and Research</td>
<td>2</td>
</tr>
<tr>
<td>or ECE 111</td>
<td>Information Literacy and Research for Electrical and Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>or MAE 111</td>
<td>Mechanical and Aerospace Engineering Information Literacy and Research</td>
<td></td>
</tr>
<tr>
<td>or MSIM 111</td>
<td>Information Literacy and Research for Modeling and Simulation Engineers</td>
<td></td>
</tr>
<tr>
<td>or ENGT 111</td>
<td>Engineering Technology Information Literacy / Research</td>
<td></td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
<td>4</td>
</tr>
<tr>
<td>ENGN 150</td>
<td>Computer Programming for Engineering Problem Solving</td>
<td>4</td>
</tr>
<tr>
<td>or CS 150</td>
<td>Problem Solving and Programming I</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

* 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 Prior Learning Assessment 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:

(a) students who have completed some course work, but who have not completed associate degrees

(b) 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.

**Civil and Environmental Engineering**

**Web Site:** http://www.odu.edu/cee

Sherif Ishak, 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: http://www.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

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:

- Successfully practice and/or pursue advanced studies in civil engineering or other fields.
- Effectively communicate the technical and social implications of civil engineering solutions.
- Appreciate and apply state-of-the-art practice in their chosen fields.
- Advance in the professional community through ethical practice, collaboration, and service.

**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 (CEEEVC) meetings.

Students who qualify for graduation will have:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply the engineering design process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline.
3. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
4. An ability to communicate effectively with a range of audiences.
5. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
6. An ability to recognize the ongoing need for additional knowledge, to choose appropriate learning strategies, and to apply this knowledge.
7. An ability to function effectively as a member or leader of a team that establishes goals, plans tasks, meets deadlines, and creates a collaborative and inclusive environment.

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.

In addition to the curriculum detailed below, all students in the Civil Engineering program are required to take the Fundamentals of Engineering
exam (http://ncees.org/exams/fe-exam/) prior to graduation. Any student passing the FE exam prior to graduation will receive a reimbursement for the exam fee paid by the CEEVC.

**Accreditation**

The Bachelor of Science in Civil Engineering is accredited by the Engineering Accreditation Commission of ABET www.abet.org. (http://www.abet.org)

**Four-Year Plan - Civil Engineering - BS** (http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/civilenvironmentalengineering/civilengn-bsce-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Civil Engineering Four-Year Plan***

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours</th>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 211</td>
<td>4</td>
<td>MATH 212</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 121N</td>
<td>3</td>
<td>CHEM 123N</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 122N</td>
<td>1</td>
<td>PHYS 231N</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 110C</td>
<td>3</td>
<td>ENGN 150 or CS 150</td>
<td>4</td>
</tr>
<tr>
<td>ENGN 110</td>
<td>2</td>
<td>CEE 111</td>
<td>2</td>
</tr>
<tr>
<td>Gen Ed - Human Creativity Way of Knowing</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16 17

<table>
<thead>
<tr>
<th>Sophomore</th>
<th>First Semester</th>
<th>Hours</th>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 204 (grade of C or better required)</td>
<td>3</td>
<td>CEE 220</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHYS 232N</td>
<td>4</td>
<td>CEE 205</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 312 (285)</td>
<td>4</td>
<td>ENGL 211C (grade of C or better required)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Science Elective</td>
<td>CEE 219</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OEAS 111N or BIOL 110N (and BIOL 111N)</td>
<td>4</td>
<td>MATH 307 (280)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM 101R</td>
<td>3</td>
<td>Gen Ed - Literature Way of Knowing</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

18 16

<table>
<thead>
<tr>
<th>Junior</th>
<th>First Semester</th>
<th>Hours</th>
<th>Second Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 320</td>
<td>3</td>
<td>CEE 310 (grade of C or better required)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CEE 305</td>
<td>3</td>
<td>CEE 323 (grade of C or better required)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

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.

**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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 323</td>
<td>Soil Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>or CEE 340</td>
<td>Hydraulics and Water Resources</td>
<td></td>
</tr>
<tr>
<td>CEE 310</td>
<td>Structures I</td>
<td>3</td>
</tr>
<tr>
<td>CEE 370</td>
<td>Transportation Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>or CEE 4xx **</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE 4xx **</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

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 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 prerequisite requirements for the courses selected.

Two tracks are available: aqueous environmental systems and environmental protection. The course requirements are as follows:

**Aqueous Environmental Systems**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 350</td>
<td>Environmental Pollution and Control</td>
<td>3</td>
</tr>
<tr>
<td>Select three of the following:</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>CEE 440</td>
<td>Hydraulic Engineering</td>
<td></td>
</tr>
<tr>
<td>CEE 446</td>
<td>Urban Stormwater Hydrology</td>
<td></td>
</tr>
<tr>
<td>CEE 447</td>
<td>Groundwater Hydraulics</td>
<td></td>
</tr>
<tr>
<td>CEE 450</td>
<td>Water Distribution and Wastewater Collection System Design</td>
<td></td>
</tr>
<tr>
<td>CEE 451</td>
<td>Water and Wastewater Treatment</td>
<td></td>
</tr>
<tr>
<td>CEE 482</td>
<td>Introduction to Coastal Engineering</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 12

**Environmental Protection**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 350</td>
<td>Environmental Pollution and Control</td>
<td>3</td>
</tr>
<tr>
<td>Select three of the following:</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>CEE 451</td>
<td>Water and Wastewater Treatment</td>
<td></td>
</tr>
<tr>
<td>CEE 452</td>
<td>Air Quality</td>
<td></td>
</tr>
<tr>
<td>CEE 454</td>
<td>Hazardous Waste Treatment</td>
<td></td>
</tr>
<tr>
<td>CEE 458</td>
<td>Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>CEE 459</td>
<td>Biofuels Engineering</td>
<td></td>
</tr>
<tr>
<td>CEE 482</td>
<td>Introduction to Coastal Engineering</td>
<td></td>
</tr>
<tr>
<td>CEE 455</td>
<td>Pollution Prevention and Green Engineering</td>
<td></td>
</tr>
</tbody>
</table>

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.

**Electrical and Computer Engineering**

**Web Site:** http://www.odu.edu/ece

Oscar González, 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 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, Master of Science, Doctor of Engineering, and Doctor of Philosophy. 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, bioelectronics, 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 hardware, 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. 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 student to allow specialization in one of the four concentration areas: systems and automation engineering, physical electronics, computer hardware systems, or power and renewable energy. 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.

The systems and automation engineering concentration requires completion of four courses selected from the following: ECE 381, ECE 451, ECE 455, ECE 458, and ECE 461.

The physical electronics concentration requires completion of four courses selected from the following: ECE 403, ECE 454, ECE 464, ECE 471, ECE 472, ECE 473, and ECE 474.

The computer hardware systems concentration requires completion of four courses selected from the following: ECE 341, ECE 346, ECE 441, ECE 443, and ECE 483.

The power and renewable energy concentration requires completion of four courses selected from the following: ECE 303, ECE 403, ECE 404, ECE 405, ECE 408, ECE 461, ECE 471.

**Electrical Engineering Program Educational 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

**Student Outcomes**

The electrical engineering student outcomes are as follows. Graduates must attain:

Old Dominion University
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

2. An ability to apply the engineering design process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline.

3. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

4. An ability to communicate effectively with a range of audiences.

5. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

6. An ability to recognize the ongoing need for additional knowledge, to choose appropriate learning strategies, and to apply this knowledge.

7. An ability to function effectively as a member or leader of a team that establishes goals, plans tasks, meets deadlines, and creates a collaborative and inclusive environment.

Accreditation
The Bachelor of Science in Electrical Engineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Four-Year Plan - Electrical Engineering - BSEE (http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/electricalcomputerengineering/electricalengineering-bsee-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Electrical Engineering Four-Year Plan*

<table>
<thead>
<tr>
<th>Freshman</th>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGN 110</td>
<td>2</td>
<td>ECE 111</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>CHEM 121N</td>
<td>3</td>
<td>CHEM 123N</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 122N</td>
<td>1</td>
<td>MATH 212</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH 211</td>
<td>4</td>
<td>PHYS 213N</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ENGL 110C (grade of C or better required)</td>
<td>3</td>
<td>ENGN 150</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>COMM 101R</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td></td>
<td>17</td>
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<table>
<thead>
<tr>
<th>Sophomore</th>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3</td>
<td>ECE 202</td>
<td>3</td>
<td></td>
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<tr>
<td>ECE 201</td>
<td>3</td>
<td>ECE 287</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ECE 241</td>
<td>4</td>
<td>Non-major Engineering Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHYS 232N</td>
<td>4</td>
<td>MATH 312 (285)</td>
<td>4</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior</th>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 302</td>
<td>3</td>
<td>ECE 304</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECE 303</td>
<td>3</td>
<td>ECE 323</td>
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<td></td>
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<tr>
<td>ECE 313</td>
<td>4</td>
<td>ECE 381</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECE 332</td>
<td>3</td>
<td>ECE 387 (or Technical Elective)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Human Creativity Way of Knowing</td>
<td>3</td>
<td>Literature Way of Knowing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
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<table>
<thead>
<tr>
<th>Senior</th>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 485W (grade of C or better required)</td>
<td>3</td>
<td>ECE 487</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ECE 486</td>
<td>2</td>
<td>Technical Elective ***</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Technical Elective ***</td>
<td>3</td>
<td>Technical Elective ***</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Technical Elective ***</td>
<td>3</td>
<td>Human Behavior Way of Knowing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENMA 480 **</td>
<td>3</td>
<td>Upper-Division General Education course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Upper-Division General Education course</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17</td>
<td></td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

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.

*** Electrical Engineering students need four 400-level ECE technical elective courses with the option of one 300-level ECE technical elective course or one approved 300- or 400-level CS/MATH/Engineering course.

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 students to allow specialization in one or more of the three concentration areas: computer hardware systems, computer networks, or cyber security. In addition, course work in General Education Skills and Ways of Knowing is required to assure a well-rounded program of study.

The computer hardware systems concentration requires completion of four courses selected from the following: ECE 341, ECE 346, ECE 441, ECE 443, and ECE 483.

The computer networks concentration requires completion of four courses selected from the following: ECE 355, ECE 451, ECE 452, ECE 455, and CS 472.

The cyber security concentration area requires completion of four courses selected from the following: ECE 346, ECE 355, ECE 416, ECE 419, ECE 455, ECE 470, and ECE 483.

**Computer Engineering Program**

**Educational 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.

**Student Outcomes**

The computer engineering student outcomes are as follows. Graduates must attain:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply the engineering design process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline.
3. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
4. An ability to communicate effectively with a range of audiences.
5. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
6. An ability to recognize the ongoing need for additional knowledge, to choose appropriate learning strategies, and to apply this knowledge.
7. An ability to function effectively as a member or leader of a team that establishes goals, plans tasks, meets deadlines, and creates a collaborative and inclusive environment.

**Accreditation**

The Bachelor of Science in Computer Engineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. (http://www.abet.org)

**Four-Year Plan - Computer Engineering**

(http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/electricalcomputerengineering/computerengn-bscome-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Computer Engineering Four-Year Plan*

#### Freshman

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGN 110</td>
<td>2</td>
<td>ECE 111</td>
<td>2</td>
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<td>CHEM 121N</td>
<td>3</td>
<td>CHEM 123N</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 122N</td>
<td>1</td>
<td>MATH 212</td>
<td>4</td>
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<tr>
<td>MATH 211</td>
<td>4</td>
<td>PHYS 231N</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 110C (grade of C or better required)</td>
<td>3</td>
<td>ENGN 150</td>
<td>4</td>
</tr>
<tr>
<td>COMM 101R</td>
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16 17

#### Sophomore

<table>
<thead>
<tr>
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<th>Hours</th>
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<tr>
<td>MATH 307 (280)</td>
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<td>ECE 202</td>
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<td>ECE 201</td>
<td>3</td>
<td>ECE 287</td>
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<td>ECE 241</td>
<td>4</td>
<td>CS 250</td>
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<tr>
<td>PHYS 232N</td>
<td>4</td>
<td>CS 252</td>
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<tr>
<td>Literature Way of Knowing</td>
<td>3</td>
<td>CS 381</td>
<td>3</td>
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<tr>
<td>ENGL 231C (grade of C or better required)</td>
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17 16

#### Junior

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>ECE 302</td>
<td>3</td>
<td>ECE 304</td>
<td>3</td>
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<tr>
<td>ECE 313</td>
<td>4</td>
<td>ECE 346</td>
<td>3</td>
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<td>ECE 341</td>
<td>3</td>
<td>ECE 381</td>
<td>3</td>
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<tr>
<td>CS 361</td>
<td>3</td>
<td>CS 350</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity Way of Knowing</td>
<td>3</td>
<td>Technical Elective ***</td>
<td>3</td>
</tr>
</tbody>
</table>

16 15

#### Senior

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ECE 484W (grade of C or better required)</td>
<td>3</td>
<td>ECE 487</td>
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<tr>
<td>ECE 486</td>
<td>2</td>
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<td>ECE 443</td>
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<td>Technical Elective ***</td>
<td>3</td>
<td>Technical Elective ***</td>
<td>3</td>
</tr>
<tr>
<td>ENMA 480 **</td>
<td>3</td>
<td>Human Behavior Way of Knowing</td>
<td>3</td>
</tr>
</tbody>
</table>
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 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 electrical and computer engineering major are defined as courses with an ECE prefix.

1. A student will be placed on departmental academic probation whenever his or her major grade point average (GPA) falls below 2.00 (after six or more hours have been attempted in the major).
2. Students on academic probation are expected to improve their major GPA by achieving a semester GPA of 2.0 or better during the next semester of attendance. A student on academic probation will have two consecutive semesters to improve their major GPA to 2.0 before termination from the program.
3. Following two consecutive semesters of academic probation, a student is subject to termination from the program if his or her major GPA is below 2.0 and the semester GPA is below 2.0 in the major at the end of either the Fall or Spring semester.

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.

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 engineering course work at the 300 level or above. In addition, a student seeking a minor in computer 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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 202</td>
<td>Circuit Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 302</td>
<td>Linear System Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECE 304</td>
<td>Probability, Statistics, and Reliability</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- ECE 451 Communication Systems 3
- ECE 455 Network Engineering and Design 3
- ECE 461 Automatic Control Systems 3

**Total Hours**

12

**Physical Electronics Track**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 304</td>
<td>Probability, Statistics, and Reliability</td>
<td>3</td>
</tr>
<tr>
<td>ECE 323</td>
<td>Electromagnetics</td>
<td>3</td>
</tr>
<tr>
<td>ECE 332</td>
<td>Microelectronic Materials and Processes</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- ECE 471 Introduction to Solar Cells 3
- ECE 472 Plasma Processing at the Nanoscale 3
- ECE 473 Solid State Electronics 3
- ECE 474 Optical Fiber Communication 3

**Total Hours**

12

**Digital Design Track**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 241</td>
<td>Fundamentals of Computer Engineering</td>
<td>4</td>
</tr>
<tr>
<td>ECE 304</td>
<td>Probability, Statistics, and Reliability</td>
<td>3</td>
</tr>
<tr>
<td>ECE 341</td>
<td>Digital System Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- ECE 346 Microcontrollers 3
- ECE 441 Advanced Digital Design and Field Programmable Gate Arrays 3

**Total Hours**

12
Interdisciplinary Minor – Biomedical Engineering

Nicola Lai, 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 prerequisites for BME 403, BME 404 and BME 406 are BIOL 240 or BIOL 250 and MATH 200, MATH 205 or MATH 211. Prerequisite courses are not included in the calculation of the grade point average for the minor.

Course requirements are as follows:

Select two of the following BME courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BME 403</td>
<td>Introduction to Mathematical Modeling in Physiology</td>
<td>6</td>
</tr>
<tr>
<td>BME 404</td>
<td>Introduction to Biomaterials</td>
<td></td>
</tr>
<tr>
<td>BME 406</td>
<td>Transport Phenomena in Biomedical Systems</td>
<td></td>
</tr>
</tbody>
</table>

Select two elective courses from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 446</td>
<td>Comparative Biomechanics</td>
<td>6</td>
</tr>
<tr>
<td>BIOL 460</td>
<td>Frontiers in Nanoscience and Nanotechnology</td>
<td></td>
</tr>
<tr>
<td>BIOL 490</td>
<td>Advanced Human Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 496</td>
<td>Topics in Biological Sciences</td>
<td></td>
</tr>
<tr>
<td>CHEM 443</td>
<td>Intermediate Biochemistry</td>
<td></td>
</tr>
<tr>
<td>ECE 454</td>
<td>Introduction to Bioelectronics</td>
<td></td>
</tr>
<tr>
<td>ECE 462</td>
<td>Introduction to Medical Image Analysis (MIA)</td>
<td></td>
</tr>
<tr>
<td>EXSC 322</td>
<td>Anatomical Kinesiology</td>
<td></td>
</tr>
<tr>
<td>EXSC 417</td>
<td>Biomechanics</td>
<td></td>
</tr>
<tr>
<td>HLSC 405</td>
<td>Interprofessional Study Abroad on Global Health</td>
<td></td>
</tr>
<tr>
<td>MAE 303</td>
<td>Mechanics of Fluids</td>
<td></td>
</tr>
<tr>
<td>MAE 440</td>
<td>Introduction to Finite Element Analysis</td>
<td></td>
</tr>
<tr>
<td>MLS 324</td>
<td>Clinical Instrumentation and Electronics</td>
<td></td>
</tr>
<tr>
<td>MSIM 451</td>
<td>Analysis for Modeling and Simulation</td>
<td></td>
</tr>
<tr>
<td>NMED 331</td>
<td>Fundamental Concepts in Nuclear Medicine Technology</td>
<td></td>
</tr>
<tr>
<td>NURS 456</td>
<td>Global Health Perspectives</td>
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</tr>
</tbody>
</table>

Total Hours: 12

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.

Engineering Technology

Web Site: http://www.odu.edu/engtech

Ike Flory, Chair

Old Dominion University has a unique advantage of having both engineering technology and engineering programs. The Engineering Technology Department offers baccalaureate programs in Civil, Electrical and Mechanical Engineering Technology with opportunities for specialization in multiple areas.

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 to apply 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 programs in civil engineering technology (CET), electrical engineering technology (EET), and mechanical engineering technology (MET) that lead to the Bachelor of Science in Engineering Technology degree. These programs are accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org. Graduates of these 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 CET, EET, and MET programs also offer different concentrations and areas of specialization to meet student interests and industry needs. These concentrations and areas of specialization are listed under each program.

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.

Old Dominion University 246
A program in general engineering technology is available through the interdisciplinary studies degree program in the College of Arts and Letters. For more information, please see the Arts and Letters section of this catalog.

**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 https://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 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.

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**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, five outcomes for the Bachelor of Science program in civil engineering technology. These outcomes are listed below.

1. an ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, or technology to solve broadly-defined engineering problems;
2. an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems;
3. an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes;
4. an ability to function effectively as a member or leader on a technical team; and
5. 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.

**Accreditation**

The Bachelor of Science in Engineering Technology - Civil Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET www.abet.org. (http://www.abet.org)
Four-Year Plan - Civil Engineering Technology - BSET (http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/engineeringtechnology/et-cet-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Civil Engineering Technology Four-Year Plan

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

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>CET 120</td>
<td>3</td>
<td>Human Creativity</td>
<td>3</td>
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<tr>
<td>ENGN 110</td>
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<td>MATH 162M</td>
<td>3</td>
<td>MATH 163</td>
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<tr>
<td>CHEM 122N</td>
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<td>ENGL 110C (grade of C or better required)</td>
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</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
<td>Way of Knowing</td>
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Sophomore

<table>
<thead>
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<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
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<tr>
<td>CET 200 (grade of C or better required)</td>
<td>3</td>
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<td>3</td>
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<td>CET 210</td>
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<td>CET 220 (grade of C or better required)</td>
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<tr>
<td>MATH 211 (grade of C or better required)</td>
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<td>PHYS 112N</td>
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<td>COMM 101R</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 211C (grade of C or better required)</td>
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<td>ENGT 305</td>
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<tr>
<td>ENMA 480^2</td>
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Total credit hours: 15

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<tr>
<th>Upper Division Gen Ed^3</th>
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Senior

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<td>EET 370T^6</td>
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Total credit hours: 16

1 Does not include the University's General Education language and culture requirement. Additional hours may be required.
2 Meets the philosophy and ethics general education requirement.
3 One or more additional courses will be required to complete a minor. See advisor for details.
4 Students with an interest in construction, design or site development may substitute an alternate course with approval of their advisor.
5 Declaring a concentration is not mandatory. However, if a concentration is declared, at least three courses must be taken from that concentration area. The remaining two courses can be taken from any of the other available concentrations.
6 Meets the impact of technology general education requirement.

The General Education requirements in information literacy and research and philosophy and ethics are met though the major.

Electrical Engineering Technology

Otilia Popescu, Program Director

The electrical engineering technology (EET) program is accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org/. The EET program offers computer engineering technology, communications systems technology, embedded systems technology, mechatronics systems technology and power systems technology concentration areas. Students in all concentrations 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.

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 program students will automatically satisfy a minor in computer science.

Communications Systems Technology Concentration

Students choosing the communications systems technology concentration (CMCT) will receive technical instruction in fundamental electrical engineering technology with a focus upon communication systems through upper-division required courses. Students have the choice of two senior elective courses that can add to the communication systems concentration or in other related areas of electrical engineering technology. To satisfy the upper-division education requirement students are also required to complete any minor in either the College of Engineering and Technology or the College of Sciences.

Embedded Systems Technology Concentration

Students choosing the embedded systems technology concentration (EBST) will receive technical instruction in fundamental electrical engineering technology with a focus upon embedded systems through upper-division required courses. Students have the choice of two senior elective courses that can add to the embedded systems concentration or in other related areas of electrical engineering technology. To satisfy the upper-division education requirement students are also required to complete any minor in either the College of Engineering and Technology or the College of Sciences.

Mechatronics Systems Technology Concentration

Students choosing the mechatronics systems technology concentration (MCHT) will receive technical instruction in fundamental electrical engineering technology with a focus upon mechatronics systems through upper-division required courses. Students have the choice of two senior elective courses that can add to the mechatronics systems concentration or in other related areas of electrical engineering technology. To satisfy the upper-division education requirement students are also required to complete any minor in either the College of Engineering and Technology or the College of Sciences.

Power Systems Technology Concentration

Students choosing the power systems technology concentration (PWRT) will receive technical instruction in fundamental electrical engineering technology with a focus upon electrical power systems through upper-division required courses. Students have the choice of two senior elective courses that can add to the electrical power systems concentration or in other related areas of electrical engineering technology. To satisfy the upper-division education requirement, students are required to complete any minor in the College of Engineering and Technology or the College of Sciences.

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 and 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, five outcomes for the Bachelor of Science program in electrical engineering technology. These outcomes are listed below.

1. an ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, or technology to solve broadly-defined engineering problems;
2. an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems;
3. an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes;
4. an ability to function effectively as a member or leader on a technical team; and
5. 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.

Accreditation

The Bachelor of Science in Engineering Technology - Electrical Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET www.abet.org. (http://www.abet.org)

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.

Four-Year Plan - Computer Engineering Technology Concentration (http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/engineeringtechnology/et-computerengn-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.
## Computer Engineering Technology Concentration*

### Freshman

<table>
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<td>ENGL 110C</td>
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### Sophomore

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### Junior

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|             |       | 17       | 17     |

### Senior

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|             |       | 18       | 15     |

Total credit hours: 128

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* 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.


3. The ComET concentration will automatically satisfy a minor in Computer Science.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major.

## Four-Year Plan - Communications Systems Technology Concentration (http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/engineeringtechnology/et-commsystems-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

## Communications Systems Technology Concentration*

### Freshman

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<tr>
<td>Gen Ed Human Behavior (S)</td>
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|             |       | 15       | 17     |

### Sophomore

<table>
<thead>
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### Junior

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Old Dominion University 250
The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major.

### Four-Year Plan - Embedded Systems Technology Concentration

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Embedded Systems Technology Concentration*

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Total credit hours: 127

* 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.

³ 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.

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251 Engineering Technology
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.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major.

**Four-Year Plan - Mechatronics Systems Technology Concentration**
(http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/engineeringtechnology/et-mechatronicssystem-concentration-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Mechatronics Systems Technology Concentration**

**Freshman**

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**Sophomore**

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**Senior**

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<td>EET 373</td>
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<tr>
<td>Gen Ed Literature</td>
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</table>

**Total credit hours: 127**

* 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.

³ The EET Mechatronics concentration will automatically satisfy a minor in Mechanical Engineering Technology. The minor courses may be selected from the following: MET 370, MET 415, MET 426, MET 427, MET 431, MET 445.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major.

**Four-Year Plan - Power Systems Technology Concentration**
(http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/engineeringtechnology/et-powersystems-system-concentration-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Power Systems Technology Concentration**

**Freshman**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
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<tr>
<td>ENGN 110</td>
<td>2</td>
<td>MATH 163</td>
<td>3</td>
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<tr>
<td>MATH 162M</td>
<td>3</td>
<td>PHYS 111N</td>
<td>4</td>
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<tr>
<td>ENGL 110C (grade of C or better required)</td>
<td>3</td>
<td>Gen Ed Human Creativity (A)</td>
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**Sophomore**

<table>
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**Junior**

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<td>ENMA 480²</td>
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<td>MET Minor Course ³</td>
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Engineering Technology

Nathan Luetke, Program Director

The mechanical engineering technology (MET) program is accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org/. The MET program offers areas of concentration in manufacturing systems, mechanical systems design, nuclear systems, mechatronics, 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. Choose from four of the following courses: MET 400, MET 405, MET 410, MET 415, MET 420, MET 445, MET 455, EET 360.

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. Choose from four of the following courses: MET 420, MET 430, MET 431, MET 440, MET 450, MET 460, MET 480, EET 360.

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. MET 471 and MET 472, and any two courses from the mechanical systems and/or manufacturing systems design electives,

Marine Systems Area of Concentration

This concentration should attract students interested in ships' systems operation and the shipbuilding/repair industry.

MET 474, MET 475, MET 476, and MET 485

Mechatronics Systems Area of Concentration

The mechatronics systems area of concentration provides the skills for career success in design and implementation of electro-mechanical systems used commonly in factories today.

MET 426 and MET 427, and any two courses from the mechanical systems and/or manufacturing systems design electives.

* 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.

3 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.
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, five outcomes for the Bachelor of Science program in mechanical engineering technology. These outcomes are listed below:

1. an ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, or technology to solve broadly-defined engineering problems;
2. an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems;
3. an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes;
4. an ability to function effectively as a member or leader on a technical team; and
5. 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.

Accreditation

The Bachelor of Science in Engineering Technology - Mechanical Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET www.abet.org. (http://www.abet.org)

Four-Year Plan - Mechanical Engineering Technology - BSET

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Mechanical Engineering Technology Four-Year Plan*

Critical MET course sequences within the Mechanical Engineering Technology curricula require a minimum grade of C before progressing to subsequent courses. These courses are noted in the curriculum below. Students can also refer to the individual course descriptions for information on specific C grade prerequisites. A grade of C- does not satisfy the requirement for a C grade.

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**Freshman**

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 120</td>
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<td>MET 240</td>
<td>3</td>
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<td>ENGN 110</td>
<td>2</td>
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<tr>
<td>MATH 162M (grade of C or better required)</td>
<td>3</td>
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<tr>
<td>CHEM 121N</td>
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<td>PHYS 111N (grade of C or better required)</td>
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<td>Way of Knowing</td>
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**Sophomore**

<table>
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<tr>
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<tbody>
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<td>CET 220 (grade of C or better required)</td>
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<td>MET 225</td>
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<td>COMM 101R</td>
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<td>ENGL 211C (grade of C or better required)</td>
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<tr>
<td>Human Creativity</td>
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<td>Way of Knowing</td>
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<td>Gen Ed Literature</td>
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**Junior**

<table>
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<th>Hours</th>
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<tr>
<td>MET 310</td>
<td>3</td>
<td>MET 335W</td>
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</tr>
</tbody>
</table>

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Old Dominion University 254
Minor in Electrical Engineering Technology

The minor in electrical engineering technology is open to students (except electrical engineering and 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>EET 350</td>
<td>Fundamentals of Electrical Technology</td>
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</tr>
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<td>EET 360</td>
<td>Electrical Power and Machinery</td>
<td>3</td>
</tr>
<tr>
<td>EET 370T</td>
<td>Energy and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>EET 363</td>
<td>Introduction to PLC</td>
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<td><strong>Total Hours</strong></td>
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<td>12</td>
</tr>
</tbody>
</table>

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 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. The specified courses are as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>MET 300</td>
<td>Thermodynamics</td>
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<td>MET 310</td>
<td>Dynamics</td>
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<td>MET 330</td>
<td>Fluid Mechanics</td>
<td>3</td>
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<tr>
<td>MET 350</td>
<td>Thermal Applications</td>
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<tr>
<td><strong>Total Hours</strong></td>
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<td>12</td>
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</table>

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 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 475</td>
<td>Marine Engineering I</td>
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</tr>
<tr>
<td>MET 476</td>
<td>Marine Engineering II</td>
<td>3</td>
</tr>
<tr>
<td>MAE 450</td>
<td>Principles of Naval Architecture</td>
<td>3</td>
</tr>
<tr>
<td>MAE 417</td>
<td>Propulsion Systems</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
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<td>12</td>
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</table>

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 in upper-level courses in the minor requirement through courses offered by Old Dominion University.
six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University.

**Mechanical and Aerospace Engineering**

**Web Site:** http://www.odu.edu/mae

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 also 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.

**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.

**Bachelor of Science in Mechanical Engineering**

Sushil Chaturvedi, 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 identified concentration areas, or may select a custom set of courses:

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 web site. Courses are routinely scheduled in the late afternoon and evening to accommodate students with current employment.

**Outcomes**

The Mechanical and Aerospace Engineering Department has adopted, after deliberations by its constituents, 7 outcomes for the BSME program. These outcomes are listed below. The students who qualify for graduation will:

1. Be able to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. Be able to apply the engineering design process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline.
3. Be able to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
4. Communicate effectively with a range of audiences.
5. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
6. Recognize the ongoing need to acquire new knowledge, to choose appropriate learning strategies, and to apply this knowledge.
7. Function effectively as a member or leader of a team that establishes goals, plans tasks, meets deadlines, and creates a collaborative and inclusive environment.

**Mechanical Engineering Objectives**

The program's educational objectives describe the career and professional accomplishments that the program is preparing graduates to attain 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 that our graduates should accomplish the following:

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.

**Accreditation**

The Bachelor of Science in Mechanical Engineering is accredited by the Engineering Accreditation Commission of ABET www.abet.org. (http://www.abet.org)

**Four-Year Plan - Mechanical Engineering - BSME** (http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/mechanicalaerospaceengineering/mechanicalengn-bsme-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.
# Mechanical Engineering Four-Year Plan*

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<td>MATH 307 (280)</td>
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<td>STAT 330</td>
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<th>First Term</th>
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<th>Second Term</th>
<th>Hours</th>
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<td>MAE 311 (grade of C or better required)</td>
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<td>MAE 315</td>
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<tr>
<td>MAE 340</td>
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<td>MAE 336</td>
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<tr>
<td>Literature Way of Knowing</td>
<td>3</td>
<td>Philosophy and Ethics Way of Knowing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Human Creativity Way of Knowing</td>
<td>3</td>
<td>Human Behavior Way of Knowing</td>
<td>3</td>
<td></td>
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<tr>
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<td>16</td>
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<table>
<thead>
<tr>
<th>Senior</th>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>MAE 433</td>
<td>3</td>
<td>MAE 435</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAE 434W (grade of C or better required)</td>
<td>3</td>
<td>MAE Option Course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAE 436</td>
<td>3</td>
<td>MAE Option Course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAE Option Course</td>
<td>3</td>
<td>Upper-Division General Education course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Upper-Division General Education course</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 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:

| ENGL 110C | English Composition | 3     |
| ENGL 231C | Introduction to Technical Writing | 3     |
| MATH 211 | Calculus I | 4     |
| MATH 212 | Calculus II | 4     |
| CHEM 121N | Foundations of Chemistry I Lecture | 3     |
| PHYS 231N | University Physics I | 4     |
| MAE 201 | Materials Science | 3     |
| 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 332 | Mechanical Engineering Design I | 3     |
| MAE 434W | Project Design and Management I | 3     |

### Senior Concentrations

1. Power/Energy - Three courses from MAE 411, MAE 412, MAE 413, MAE 414, MAE 417, MAE 438, MAE 440.
2. Mechanical Systems Design - Three courses from MAE 404, MAE 422, MAE 431, MAE 438, MAE 440, MAE 441.
3. Aerospace - Three courses from MAE 403, MAE 406, MAE 417, MAE 420 (or MAE 440), MAE 438 or MAE 460.

Students may also select alternative combinations of 300/400-level courses, in which case they will be considered to have an "undesignated" concentration.

### 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. Required courses are all those specifically listed above. Major GPA is calculated based on courses with an MAE prefix.
The course requirements are as follows:

### Minor in Aerospace Engineering

The Department of Mechanical and Aerospace Engineering offers a minor program in aerospace engineering comprising four courses chosen from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 403</td>
<td>Flight Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 406</td>
<td>Flight Vehicle Aerodynamics</td>
<td>3</td>
</tr>
<tr>
<td>MAE 417</td>
<td>Propulsion Systems</td>
<td>3</td>
</tr>
<tr>
<td>MAE 420</td>
<td>Aerospace Structures</td>
<td>3</td>
</tr>
<tr>
<td>or MAE 440</td>
<td>Introduction to Finite Element Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MAE 438</td>
<td>Applied Analog and Digital Control</td>
<td>3</td>
</tr>
<tr>
<td>MAE 460</td>
<td>Introduction to Space Systems Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours Required (choose 4 courses): 12

It may be possible to substitute other appropriate junior- or senior-level mechanical and aerospace engineering courses with prior approval of the Mechanical and Aerospace Engineering Department. The minor in aerospace engineering is open to all students except for those majoring in mechanical engineering with a concentration in aerospace engineering. 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.

### 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 475</td>
<td>Marine Engineering I</td>
<td>3</td>
</tr>
<tr>
<td>MET 476</td>
<td>Marine Engineering II</td>
<td>3</td>
</tr>
<tr>
<td>MAE 450</td>
<td>Principles of Naval Architecture</td>
<td>3</td>
</tr>
<tr>
<td>MAE 417</td>
<td>Propulsion Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

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.
Computational Modeling and Simulation Engineering

Web Site: http://www.odu.edu/msve

Frederic D. McKenzie, Chair

The Department of Computational Modeling and Simulation Engineering (CMSE) offers an undergraduate four-year degree program leading to the Bachelor of Science in Modeling and Simulation Engineering (M&SE). The program is accredited by the Engineering Accreditation Commission (EAC) of ABET, http://www.abet.org. 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

CMSE 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

CMSE 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. These courses can be combined with MSIM technical elective courses to complete a concentration providing depth in one of the following fields:

- Gaming
- Transportation
- Cybersecurity

- Digital Manufacturing
- Advanced Simulation Techniques

Students should consult the department for specific course options within each concentration. 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 Computational Modeling and Simulation 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 identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply the engineering design process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline.
3. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
4. An ability to communicate effectively with a range of audiences.
5. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
6. An ability to recognize the ongoing need to acquire new knowledge, to choose appropriate learning strategies, and to apply this knowledge.
7. An ability to function effectively as a member or leader of a team that establishes goals, plans tasks, meets deadlines, and creates a collaborative and inclusive environment.
8. An ability to model a variety of systems from different domains;
9. An ability to select and apply appropriate simulation techniques and tools; and

In addition, students have the following characteristics specific to the modeling and simulation engineering discipline, which expand on the above engineering program outcomes:

8. An ability to model a variety of systems from different domains;
9. An ability to select and apply appropriate simulation techniques and tools; and
10. An ability to apply visualization techniques to support the simulation process.

Accreditation
The Bachelor of Science in Modeling and Simulation Engineering is accredited by the Engineering Accreditation Commission of ABET www.abet.org. (http://www.abet.org)

Four-Year Plan - Modeling and Simulation Engineering - BSMSE
(http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/modelingsimulationvisualizationengineering/msimengn-bsmse-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Modeling and Simulation Engineering Four-Year Plan*

<table>
<thead>
<tr>
<th>Freshman</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>First Term</strong></td>
<td>Hours</td>
<td><strong>Second Term</strong></td>
</tr>
<tr>
<td>MATH 211</td>
<td>4</td>
<td>MATH 212</td>
</tr>
<tr>
<td>ENGL 110C (grade of C or better required)</td>
<td>3</td>
<td>CHEM 123N**</td>
</tr>
<tr>
<td>CHEM 121N**</td>
<td>3</td>
<td>PHYS 231N</td>
</tr>
<tr>
<td>CHEM 122N**</td>
<td>1</td>
<td>ENGN 150</td>
</tr>
<tr>
<td>ENGN 110</td>
<td>2</td>
<td>MSIM 111</td>
</tr>
<tr>
<td>COMM 101R</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Sophomore</th>
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</thead>
<tbody>
<tr>
<td><strong>First Term</strong></td>
<td>Hours</td>
<td><strong>Second Term</strong></td>
</tr>
<tr>
<td>MSIM 201</td>
<td>3</td>
<td>MSIM 205</td>
</tr>
<tr>
<td>STAT 330</td>
<td>3</td>
<td>MSIM 281</td>
</tr>
<tr>
<td>PHYS 232N</td>
<td>4</td>
<td>MATH 307</td>
</tr>
<tr>
<td>CS 250</td>
<td>4</td>
<td>ENGL 231C (grade of C or better required)</td>
</tr>
<tr>
<td>CS 252</td>
<td>1</td>
<td>Human Creativity</td>
</tr>
<tr>
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<td>Literature</td>
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<td><strong>15</strong></td>
<td><strong>16</strong></td>
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<table>
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<tr>
<th>Junior</th>
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<td><strong>First Term</strong></td>
<td>Hours</td>
<td><strong>Second Term</strong></td>
</tr>
<tr>
<td>CS 330</td>
<td>3</td>
<td>MSIM 331</td>
</tr>
<tr>
<td>CS 381</td>
<td>3</td>
<td>MSIM 383</td>
</tr>
<tr>
<td>MSIM 320</td>
<td>3</td>
<td>MSIM 410</td>
</tr>
<tr>
<td>MSIM 382</td>
<td>1</td>
<td>MSIM 451</td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
<td>Interpreting the Past</td>
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<tr>
<td><strong>16</strong></td>
<td><strong>16</strong></td>
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</tbody>
</table>

Approved Program Elective 3
Upper-Division General Education course/Option D Course I 3
Upper-Division Technical Elective II 3
ENMA 401 3
Approved Program Elective 3
Approved MSIM Technical Elective I 3
Approved MSIM Technical Elective II 3
Impact of Technology **** 3

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 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 Computational Modeling and Simulation 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 modeling and simulation engineering major are defined as courses with an MSIM 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. Students on departmental academic probation are expected to improve their major GPA by achieving a semester GPA of 2.0 or better during the next semester of attendance. A student on departmental academic probation will have two consecutive semesters to improve their major GPA to 2.0 before termination from the program.
3. A student on departmental academic probation is subject to termination from the program if the semester GPA is below 2.0 in the major at the end of either the Fall or Spring semesters.

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.
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 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 Computational Modeling and Simulation 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 330</td>
<td>An Introduction to Probability and Statistics (or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>MSIM 205</td>
<td>Discrete Event Simulation</td>
<td>3</td>
</tr>
<tr>
<td>MSIM 320</td>
<td>Continuous Simulation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>and three hours selected from either</td>
<td>3</td>
</tr>
<tr>
<td>MSIM 410</td>
<td>Model Engineering</td>
<td></td>
</tr>
<tr>
<td>MSIM 451</td>
<td>Analysis for Modeling and Simulation</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Simulation Development Track

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 330</td>
<td>An Introduction to Probability and Statistics (or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>MSIM 205</td>
<td>Discrete Event Simulation</td>
<td>3</td>
</tr>
<tr>
<td>MSIM 331</td>
<td>Simulation Software Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>and three hours selected from either</td>
<td>3</td>
</tr>
<tr>
<td>MSIM 406</td>
<td>Introduction to Distributed Simulation</td>
<td></td>
</tr>
<tr>
<td>MSIM 408</td>
<td>Introduction to Game Development</td>
<td></td>
</tr>
<tr>
<td>MSIM 441</td>
<td>Computer Graphics and Visualization</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

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 Computational Modeling and Simulation Engineering (p. 259).

Naval Science (Naval Reserve Officers Training Corps)

Web Site: https://www.odu.edu/nrotc

Michael C. Bratley, 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAVS 101</td>
<td>Introduction to Naval Science</td>
<td>2</td>
</tr>
<tr>
<td>NAVS 102</td>
<td>Naval Sea Power</td>
<td>3</td>
</tr>
<tr>
<td>NAVS 301</td>
<td>Navigation and Naval Operations I</td>
<td>3</td>
</tr>
<tr>
<td>NAVS 401</td>
<td>Leadership and Management I</td>
<td>3</td>
</tr>
</tbody>
</table>

The advanced course is normally pursued during the junior and senior years.

Accompanying laboratory sessions

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAVS 201</td>
<td>Naval Ships Systems I</td>
<td>3</td>
</tr>
<tr>
<td>NAVS 202</td>
<td>Naval Ships Systems II</td>
<td>3</td>
</tr>
<tr>
<td>NAVS 302</td>
<td>Navigation and Naval Operations II</td>
<td>3</td>
</tr>
<tr>
<td>NAVS 402</td>
<td>Leadership and Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

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

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:
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAVS 302</td>
<td>Navigation and Naval Operations II</td>
<td>3</td>
</tr>
<tr>
<td>or NAVS 410</td>
<td>Fundamentals of Maneuver Warfare</td>
<td></td>
</tr>
<tr>
<td>NAVS 301</td>
<td>Navigation and Naval Operations I</td>
<td>3</td>
</tr>
<tr>
<td>or NAVS 310</td>
<td>Evolution of Warfare</td>
<td></td>
</tr>
<tr>
<td>NAVS 401</td>
<td>Leadership and Management I</td>
<td>3</td>
</tr>
<tr>
<td>NAVS 402</td>
<td>Leadership and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENMA 301</td>
<td>Introduction to Engineering Management</td>
<td></td>
</tr>
<tr>
<td>ENMA 401</td>
<td>Project Management</td>
<td></td>
</tr>
<tr>
<td>ENGL 435W</td>
<td>Management Writing</td>
<td></td>
</tr>
<tr>
<td>HIST 360</td>
<td>American Military History</td>
<td></td>
</tr>
<tr>
<td>HIST 408</td>
<td>War and American Society in the Twentieth Century</td>
<td></td>
</tr>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and Management</td>
<td></td>
</tr>
<tr>
<td>MGMT 340</td>
<td>Human Resources Management</td>
<td></td>
</tr>
<tr>
<td>NURS 480W</td>
<td>Nursing in the Health Care System: Leadership</td>
<td></td>
</tr>
<tr>
<td>PHIL 441</td>
<td>Foundations of Ethics</td>
<td></td>
</tr>
<tr>
<td>PHIL 442E</td>
<td>Studies in Applied Ethics</td>
<td></td>
</tr>
<tr>
<td>POLS 326W</td>
<td>American Foreign Policy</td>
<td></td>
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<tr>
<td>POLS 327W</td>
<td>Politics of National Security</td>
<td></td>
</tr>
<tr>
<td>POLS 350T</td>
<td>Technology and War</td>
<td></td>
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<tr>
<td>POLS 421</td>
<td>International Law</td>
<td></td>
</tr>
<tr>
<td>PSYC 343</td>
<td>Personnel Psychology</td>
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</tr>
<tr>
<td>PSYC 345</td>
<td>Organizational Psychology</td>
<td></td>
</tr>
<tr>
<td>SOC 352</td>
<td>War and Peace</td>
<td></td>
</tr>
</tbody>
</table>

**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.

For more information contact the Department of Naval Science at (757) 683-4741 or visit the web site: [http://www.odu.edu/nrotc](http://www.odu.edu/nrotc).
College of Health Sciences

Web Site: http://www.odu.edu/hs

Bonnie Van Lunen, Dean
Debbie Blythe Bauman, Assistant Dean
Richardean Benjamin, Associate Dean for Graduate Education
To be named, Associate Dean of Research
Leanne White, Director of College Advising
Jacob Tousignant, Advisor
Brittani Garcia, 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 Rehabilitation Sciences. 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

Intended Health Sciences students - Health Sciences Advising Center

Students who qualify for regular admission to the University and who intend to apply for admission to a health sciences major program are considered Intended Health Sciences students until admitted to their intended major. They will be assigned an advisor in the Health Sciences Advising Center while completing general education and prerequisite requirements needed to apply to their intended major. Intended health sciences students receive individualized advising support designed to prepare them for success in their chosen health sciences major.

Contact:
Health Sciences Advising Center
3113 Health Sciences Building
757-683-5137
HSAdvising@odu.edu

Regulations for Continuance as an Intended Health Sciences Major

Students are eligible to continue as Intended Health Sciences majors as long as they meet both of the following:

1. Meet the continuance regulations of the University.
2. Make reasonable progress toward matriculation into a College of Health Sciences major program.

At the end of each semester (fall, spring, and summer), the Health Sciences Advising Center reviews the records of all students who do not meet minimum admissions requirements for their intended major (see admissions information in the specific program sections of the Catalog and on the web site.) A student who has ceased reasonable progress toward admission into a Health Sciences degree program will be notified in writing via the student's Old Dominion University e-mail address, in accordance with the Electronic Messaging Policy for Official University Communication.

Students identified as not making reasonable progress toward their intended Health Sciences degree program will be referred to an advisor in the Student Success Center and/or the Center for Major Exploration for assistance in selecting a new intended major.

Program Admission

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.

Community and Environmental Health

Web Site: http://www.odu.edu/academics/programs/undergraduate/
environmental-health

Muge Akpinar-Elci, 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, industrial hygiene, 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 professionals the opportunity to complete their degrees in a distance format.

Bachelor of Science - Environmental Health

www.hs.odu.edu/commhealth/academics/bs_enviro/

Sean Banaee, 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 occupational safety specialists, industrial hygienists, and environmental health specialists.

Environmental health professionals manage safety programs, conduct accident investigations, perform Job Hazard Analysis, provide safety training, conduct safety audits, and lead emergency response services. Industrial hygienists conduct evaluations and monitor harmful agents and health hazards (such as: noise and vibration, chemicals, gases and vapors, radiation, heat, and biohazards) in the work environment and recommend controls to minimize the health risk to workers in the occupational environment. In simple terms they anticipate, recognize, evaluate and control occupational exposures. On the environmental side, environmental health professionals are responsible for education, consultation, and
enforcement relating to local, state and federal environmental health laws, regulations, and standards. They work with air, water, food, hazardous and infectious wastes, sewage, housing, vectors, institutional environments, and other health hazards. Environmental health professionals manage environmental health and safety programs for corporations and private industry, government agencies, academic institutions, health departments, and military installations.

The program requires three credit hours of internship field practice within an environmental or occupational health facility or industrial site. A variety of internship sites are available in the Hampton Roads area for these experiences. Internship sites throughout the U.S. and overseas are also available. Internships are available any semester but are typically completed in the summer between the junior and senior year. Most internships are paid and many out of area internships offer a stipend to cover expenses.

Upon graduation, students are eligible to sit for the professional licensing examination in environmental health. With work experience, students are eligible to take the certification examinations in industrial hygiene as Certified Industrial Hygienist (CIH) and in safety as Associate Safety Professional (ASP) and then a Certified Safety Professional (CSP).

A broad spectrum of employment opportunities is available to graduates. Alumni employment success has been outstanding, with graduates finding employment in agencies such as the USDA, EPA, OSHA, NASA, FDA, and DOD. Many work in private industries, manufacturing plants, the oil industry, consulting firms, health departments, waste and wastewater plants, civil service, and other organizations.

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

MATH 162M Precalculus I * 3

Language and Culture 0-6

Info. Literacy & Research ** 3

Human Creativity 3

Interpreting the Past 3

Literature 3

Philosophy and Ethics *** 0-3

The Nature of Science 12

Select one of the following sequences:

BIOL 110N & BIOL 111N Environmental Sciences and Environmental Sciences Lab

or

BIOL 117N & BIOL 118N Introduction to Human Biology and Introduction to Human Biology Lab

or

BIOL 121N & BIOL 122N General Biology I and General Biology I Lab

and

BIOL 123N General Biology II & BIOL 124N 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 I *

PHYS 232N University Physics *

Human Behavior 3

Impact of Technology (upper-division T course outside the College of Health Sciences; meets upper-division general education) 3

Departmental Requirements 24

STAT 130M Elementary Statistics *

BIOL 103 Basic Bacteriology *

BIOL 240 Fundamentals of Anatomy and Physiology I *

or

BIOL 250 Human Anatomy and Physiology I *

CHEM 121N Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory +*

CHEM 122N Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory +*

CHEM 211 Organic Chemistry I Lecture & CHEM 212 and Organic Chemistry I Laboratory *

Major Requirements 31

ENVH 301 Principles of Environmental Health Science

ENVH 402W Environmental and Occupational Health Administration and Law *****

ENVH 403 Environmental and Occupational Health Internship I

ENVH 406 Principles of Occupational Safety and Health

ENVH 420 Communicable Diseases

ENVH 422 Water and Wastewater Technology

ENVH 441 Industrial Hygiene

ENVH 443 Principles of Toxicology

ENVH 448 Epidemiology and Biostatistics

ENVH 466 Environmental and Occupational Risk Assessment and Decision Analysis

ENVH 499 Environmental and Occupational Health Senior Seminar

ENVH Electives ***** 12

ENVH 401 Occupational Health

ENVH 407 Occupational Safety Standards, Laws and Regulations

ENVH 421 Food Safety

ENVH 423 Vector-Borne Diseases and Their Control

ENVH 425 Occupational Safety and Health Program Management

ENVH 426 Physical Hazards and Their Control

ENVH 438 Environmental Emergencies and Disasters

ENVH 440 Principles of Ergonomics

ENVH 442 Industrial Hygiene Sampling Methods

ENVH 445 Air Pollution and Its Control

ENVH 446 Physical Hazards Laboratory

ENVH 461 Hazardous Waste Management

ENVH 470 Industrial Environmental Management
Elective Credit

Elective credit may be needed to meet the minimum requirement of 120 credit hours.

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

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 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.

Four-Year Plan - Environmental Health - BS (http://catalog.odu.edu/undergraduate/collegeofhealthsciences/communityenvironmentalhealth/envhealth-bseh-foureyearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Minor in Environmental Health

Sean Banaee, Coordinator

A minor in environmental health requires a minimum of 12 semester hours of environmental health courses. Minor course requirements include ENVH 301 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

Sean Banaee, 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 350</td>
<td>Environmental Pollution and Control</td>
<td>3</td>
</tr>
<tr>
<td>CEE 458</td>
<td>Sustainable Development</td>
<td>3</td>
</tr>
<tr>
<td>ECON 435</td>
<td>Health Economics: A Global Perspective</td>
<td>3</td>
</tr>
<tr>
<td>ECON 447W</td>
<td>Natural Resource and Environmental Economics</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 301</td>
<td>Principles of Environmental Health Science</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 402W</td>
<td>Environmental and Occupational Health Administration and Law</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 420</td>
<td>Communicable Diseases</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 421</td>
<td>Food Safety</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 422</td>
<td>Water and Wastewater Technology</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 305</td>
<td>World Resources</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 306T</td>
<td>Hazards: Natural and Technological</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 400W</td>
<td>Seminar in Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 420</td>
<td>Marine Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 422W</td>
<td>Coastal Geography</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 302</td>
<td>Environmental Geology</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 310</td>
<td>Global Earth Systems</td>
<td>4</td>
</tr>
<tr>
<td>PAS 300</td>
<td>Foundations of Public Service</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 344E</td>
<td>Environmental Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 345E</td>
<td>Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 300</td>
<td>Introduction to Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>POLS 335</td>
<td>Environmental Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 401</td>
<td>Global Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 405</td>
<td>Outdoor Recreation</td>
<td>3</td>
</tr>
<tr>
<td>SOC 309</td>
<td>Population and Society</td>
<td>3</td>
</tr>
<tr>
<td>SOC 320</td>
<td>Social Inequality</td>
<td>3</td>
</tr>
<tr>
<td>SOC 325</td>
<td>Social Welfare</td>
<td>3</td>
</tr>
<tr>
<td>SOC 440</td>
<td>Sociology of Health and Wellbeing</td>
<td>3</td>
</tr>
<tr>
<td>SOC/CRJS 444</td>
<td>Community Justice</td>
<td>3</td>
</tr>
</tbody>
</table>

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.

Linked Program-Bachelor of Science in Environmental Health (B.S.) to M.S. in Community Health

Students in environmental health who have a 3.00 GPA and have senior standing may apply for acceptance into the Bachelor’s to Master of Science in community health linked program. This program allows gifted undergraduate students the opportunity to take up to 12 semester hours of graduate course work and apply them to both degrees. Other restrictions apply. Students in the linked program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Consult with the environmental health program director for more information.
Minor in Occupational Safety
Sean Banaee, Coordinator

A minor in occupational safety is available in the environmental and occupational 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVH 406</td>
<td>Principles of Occupational Safety and Health</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 407</td>
<td>Occupational Safety Standards, Laws and Regulations</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 425</td>
<td>Occupational Safety and Health Program Management</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 426</td>
<td>Physical Hazards and Their Control</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

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
Sean Banaee, Coordinator

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 in all courses taken toward the certificate. After successful completion of the program, a Certificate in Occupational Safety will be awarded.

A total of 12 semester hours of ENVH safety courses are required that include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVH 406</td>
<td>Principles of Occupational Safety and Health</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 407</td>
<td>Occupational Safety Standards, Laws and Regulations</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 425</td>
<td>Occupational Safety and Health Program Management</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 426</td>
<td>Physical Hazards and Their Control</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

The Bachelor of Science in Health Sciences is designed to offer advanced educational experiences to students who are non-health or health professionals and/or who have completed a certification or Associate of Science degree in a health-related discipline, have credentials to practice in their field, and have experience as a health care provider. This program also builds on the expertise of practicing health professionals and allows them the opportunity to enhance their formal learning. The program focuses on upper-level course work and general education in conjunction with an area of career enhancement chosen by the individual student.

The Bachelor of Science in Health Sciences aims to provide students with current, relevant information and experiences that will enable them to function as entry-level health service administrators. The program will prepare individuals to be able to function as health services administrators in local, state, and national arenas. Additionally, the program will prepare persons seeking advanced study in preparation for the M.P.H., M.P.A., and M.S. degrees and the foundation for Ph.D. or M.D. educational career paths.

Gradients of the Bachelor of Science in Health Sciences with a major in Health Services Administration will possess the knowledge and skills necessary to enhance the administration and the delivery of health services through health care management and policy education. These graduates will serve as leaders for health care organizations in the public, private, and military organizations. The curriculum for the Health Services Administration major integrates a multidisciplinary approach that includes global and public health, health care finance, health services research, epidemiology, health care policy and health care management. Students will have the opportunity to gain practical health care management experience and drive the innovation in health care policy.

Graduates of the program will be ready to serve as invaluable leaders in health care services.

Admission to the Bachelor of Science in Health Sciences Program

1. Applicants for admission to the baccalaureate program in health sciences should apply initially to the Office of Admissions of Old Dominion University. Students cannot be accepted into the Bachelor of Science in Health Sciences program without first being admitted to the University. Admission to the University does not constitute admission to the Bachelor of Science in Health Sciences program. Students are admitted to the School of Community and Environmental Health after completion of lower-level General Education courses and BSHS program prerequisite courses.

2. Applicants for admission to the Bachelor of Science in Health Sciences program must complete all prerequisite courses with a grade of “C” or better prior to being admitted to the School of Community and Environmental Health. 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 Old Dominion University requirements. Students must be accepted to the program before enrolling in any 300- or 400-level required course.

3. Applicants must complete a Supplemental Application to be considered for admission to the BSHS program. The Bachelor of Science in Health Sciences Supplemental Application may be obtained directly from the School of Community and Environmental Health website, the College of Health Sciences Academic Advising Center or the Bachelor of Science in Health Sciences program website.

Students may be accepted into the program in Fall, Spring or Summer. The deadlines for applications and submission of all materials are May 15 for Fall term entry, October 15 for Spring term entry, and February 15 for Summer term entry. Admission to the program is competitive; admission decisions are determined by the admissions panel of the BSHS program on the basis of academic qualifications and experience.

Application Checklist

1. Apply and be admitted to the University as a degree-seeking undergraduate student. Transfer students should have a transfer credit
The internship (CHP 468) is designed and implemented to ensure that students achieve the following objectives:

1. Practical experience in a health setting via exposure to an organization and/or community context that generates health activities.
2. Acquisition of practical skills via related field assignments that challenge students to utilize knowledge of competencies learned from the academic curriculum and improved understanding of the political, economic, social and organizational context within which public health and health services administrative activities operate.

Internship is a planned, supervised and evaluated exercise that serves as a culminating experience for students pursuing the BSHS degree. Internships must be planned and approved during the penultimate semester of coursework at ODU. This is imperative as the foundational skills and concepts are achieved during the span of entire coursework at ODU. Internships should be sought and undertaken in an organization, agency, department or community that provides planning and/or services that are relevant to the core areas of health services administration or public health.

Any student who plans to organize an internship without the appropriate foundation may be at a disadvantage in the organizations in which internships are undertaken. All students are strongly encouraged to complete an Internship within their major, i.e. Health Services Administration or Public Health. The internship experience and course address the relevance of developing skills and competencies as required for the future of public health practitioners and health services administrators.

### Requirements for the Major in Health Services Administration

Lower-division general education courses and STAT 130M and CHP 200 are prerequisites and must be completed prior to submission of the BSHS program application. STAT 130M and CHP 200 must be completed with a grade of C or better. Students must be admitted to the program by the Program Director prior to starting the B.S.H.S. major courses.

#### Lower-Division General Education

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (grade of C or better required in both courses)</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics (STAT 130M required; must be completed with a grade of C or better prior to submission of the BSHS program application)</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Oral Communication (met in the major by CHP 400, CHP 450, and CHP 415W or CHP 430W)</td>
<td>3</td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics (met in the major by CHP 400)</td>
<td>3</td>
</tr>
<tr>
<td>Impact of Technology (met in the major by CHP 485)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>32-38</td>
</tr>
</tbody>
</table>

#### Major Course Requirements

**Core Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 200 Principles of Public Health (must be completed with a C or better prior to submission of the BSHS program application)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

**Program Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 400 Ethics in Health Administration *</td>
<td>3</td>
</tr>
<tr>
<td>CHP 415W Critical Issues in Public/Community Health Administration * or CHP 430W Community Health Resources and Health Promotion</td>
<td>3</td>
</tr>
<tr>
<td>CHP 425 Health Aspects of Aging</td>
<td>3</td>
</tr>
<tr>
<td>CHP 440 Finance and Budgeting in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>CHP 445 Health Services Research Methods or DNTH 415 Research Methods in the Health Sciences</td>
<td>3</td>
</tr>
<tr>
<td>CHP 450 Public and Community Health Administration</td>
<td>3</td>
</tr>
<tr>
<td>CHP 465 Policy and Politics of Health</td>
<td>3</td>
</tr>
<tr>
<td>CHP 475 Healthcare Marketing</td>
<td>3</td>
</tr>
<tr>
<td>CHP 480 Health Ethics and the Law</td>
<td>3</td>
</tr>
<tr>
<td>CHP 485 Health Informatics **</td>
<td>3</td>
</tr>
<tr>
<td>CHP 468 Internship</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 325 Contemporary Organizations and Management</td>
<td>3</td>
</tr>
<tr>
<td>Select four MGMT 300/400-level electives from the following</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 330 Organizational Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>
**Employee Relations Problems and Practices**

**Ethics in Health Administration**

**Public and Community Health**

**Organizational Behavior**

**Contemporary Organizations and Comparative International Management**

**Negotiations and Change Management**

**The U.S. Healthcare Delivery System**

**Health Informatics**

**Principles of Environmental Health Science**

**Employment Law**

**Public Health Science**

**Finance and Budgeting in Healthcare**

**Negotiations and Change Management**

**Comparative International Management**

**Medical Technology, Medical Laboratory Technology, Cytotechnology, Therapy, Occupational Therapy Assistant, Dental Hygiene, Emergency Medical Technology, Medical Laboratory Technology, Cytotechnology, Paramedic, Respiratory Therapy, and Physical Therapy Assistant or military experience such as Hospital Corpsman. Consult the Program Director for specific information on program eligibility. CHP 200 is waived for students meeting these standards. Up to 23 professional elective credits will be awarded upon program admission; the number of credits is determined by training hours completed. These experiential hours are included in the overall number of hours needed for graduation. These hours are applied to the number of elective hours needed to meet the graduation requirement of 120 hours. In summary, three credit hours are waived (CHP 200 not required) and up to 23 experiential credit hours can be awarded, leaving 97 hours needed to complete the BSHS Health Services Administration professional major.

**Lower-Division General Education**

- **Written Communication (grade of C or better required in both courses)**
  - 6 hours
- **Mathematics (STAT 130M required; must be completed with a C or better prior to submission of the BSHS program application)**
  - 3 hours
- **Human Creativity**
  - 3 hours
- **Interpreting the Past**
  - 3 hours
- **Language and Culture**
  - 0-6 hours
- **Oral Communication (met in the major by CHP 400, CHP 450 and CHP 430W)**
  - 3 hours
- **Philosophy and Ethics (met in the major by CHP 400)**
  - 3 hours
- **Impact of Technology (met in the major by CHP 485)**
  - 3 hours

**Major Requirements**

**Core Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 328</td>
<td>Public Health Science</td>
</tr>
<tr>
<td>CHP 335</td>
<td>Population Health</td>
</tr>
<tr>
<td>CHP 390</td>
<td>The U.S. Healthcare Delivery System</td>
</tr>
<tr>
<td>CHP 461</td>
<td>Managerial Epidemiology</td>
</tr>
<tr>
<td>ENVH 301</td>
<td>Principles of Environmental Health Science</td>
</tr>
</tbody>
</table>

**Program Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 400</td>
<td>Ethics in Health Administration *</td>
</tr>
<tr>
<td>CHP 415W</td>
<td>Critical Issues in Public/Community Health Administration *</td>
</tr>
<tr>
<td>or CHP 430W</td>
<td>Community Health Resources and Health Promotion</td>
</tr>
<tr>
<td>CHP 440</td>
<td>Finance and Budgeting in Healthcare</td>
</tr>
<tr>
<td>CHP 445</td>
<td>Health Services Research Methods</td>
</tr>
<tr>
<td>or DNTH 415</td>
<td>Research Methods in the Health Sciences</td>
</tr>
<tr>
<td>CHP 450</td>
<td>Public and Community Health Administration</td>
</tr>
<tr>
<td>CHP 480</td>
<td>Health Ethics and the Law</td>
</tr>
<tr>
<td>CHP 485</td>
<td>Health Informatics **</td>
</tr>
<tr>
<td>CHP 468</td>
<td>Internship</td>
</tr>
<tr>
<td>MGMT 325</td>
<td>Contemporary Organizations and Management</td>
</tr>
</tbody>
</table>

**Select four MGMT 300/400-level electives from the following**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 330</td>
<td>Organizational Behavior</td>
</tr>
<tr>
<td>MGMT 340</td>
<td>Human Resources Management</td>
</tr>
<tr>
<td>MGMT 350</td>
<td>Employee Relations Problems and Practices</td>
</tr>
<tr>
<td>MGMT 360</td>
<td>Labor Management Relations</td>
</tr>
<tr>
<td>MGMT 417</td>
<td>Employment Law</td>
</tr>
<tr>
<td>MGMT 418</td>
<td>Advanced Human Resources Management:</td>
</tr>
<tr>
<td>MGMT 452</td>
<td>Negotiations and Change Management</td>
</tr>
</tbody>
</table>

**Electives**

Elective credits may be needed to achieve the minimum 120 hours required for the degree. Electives can be from any College. Some electives that can be considered are: ENVH 401, ENVH 420, and HLSC 405.

**Upper-Division General Education**

Completion of the MGMT courses required for the major results in a minor in management and meets upper-division general education.

**Graduation Requirements**

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, a 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 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.

**Total: 120 credit hours**

**Four-Year Plan - Health Services Administration Major**

- **BSHS** (http://catalog.odu.edu/undergraduate/collegeofhealthsciences/communityenvironmentalhealth/hs-healthservadmin-bshs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Requirements for the Major in Health Services Administration (Professional)**

Lower-division general education courses and STAT 130M with at least a grade of C or higher are prerequisites and must be completed prior to submission of the BSHS program application. CHP 200 is waived for students in this major. Students must be admitted to the program Director prior to starting the BSHS major courses.

Current licensure as a health professional, an Associate of Applied Science degree, and/or certification will be used toward satisfying the professional elective requirements. 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: Medical Corps, Radiation Technology, Medical Dosimetry, Nuclear Medicine Technology, Radiologic Technology, Nursing, Occupational Therapy, Occupational Therapy Assistant, Dental Hygiene, Emergency Medical Technology, Medical Laboratory Technology, Cytotechnology, Paramedic, Respiratory Therapy, and Physical Therapy Assistant or military
Upper-Division General Education
Completion of the MGMT courses required for the major results in a minor in management and meets upper-division general education.

Electives
Elective credit may be needed to achieve the minimum 120 hours required for the degree.

Graduation Requirements
Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, a 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 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.

Total: 120 credit hours

Minor in Community Health
A minor in community health is available in the BSHS Health Services Administration program.

The minor in community health is designed to prepare students in the ever-changing world of healthcare and health behavior as practitioners and offers courses in such areas as nutrition, healthcare marketing and use of policy and health administration methods. The goal of the minor is to emphasize operations and public health preparedness as well as communication and critical thinking. It is possible to complement the minor with courses in environmental or occupational health. The minor is especially attractive to students in other majors such as psychology, nursing, dental hygiene, engineering, occupational and technical studies, and business who may reasonably anticipate public health and community health as core components of their duties. The minor prepares the students for an experience in internship sites like the American Heart Association, the American Red Cross, hospitals, nursing homes, fitness centers, work site health education programs, and substance abuse prevention centers and other non-profit organizations.

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 450 Public and Community Health Administration 3
- CHP 465 Policy and Politics of Health 3
- CHP 475 Healthcare Marketing 3
- CHP 485 Health Informatics 3

One of the following may be substituted for one CHP course:
- DNTH 415 Research Methods in the Health Sciences
- ENVH 301 Principles of Environmental Health Science
- ENVH 401 Occupational Health

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 (BSHS) 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 BSHS
Deborah Krzyzaniak , Program Director

This concentration is available to students who complete the requirements for the BSHS degree. Specific information on the cytotechnology program can be found in the School of Medical Diagnostic and Translational Sciences section of this Catalog.

Bachelor of Science in Public Health (BSPH)

Webpage: http://www.odu.edu/commhealth/academics/undergraduate
Program Email: [bsp@odu.edu]
Program Director (Interim): Jim Bellamy

Graduates of the Bachelor of Science in Public Health (BSPH) will possess knowledge and skills necessary to prevent disease, prolong life and promote health through the organized efforts of society. Graduates will be able to serve as leaders in the various departments of health, health care organizations, non-profit organizations, health care providers, research organizations and communities with a primary aim of providing conditions in which people can lead healthy lives. The curriculum for the Public Health major incorporates a flexible, challenging, and contemporary curriculum that includes coursework in epidemiology and biostatistics, health care ethics, the natural sciences, public and health policy, health care economics, environmental health issues and social and behavioral health, among other areas. The program also provides students with courses in basic research methods necessary for assessment, analysis, communication, research, problem solving and critical thinking abilities in the emerging emphasis on evidence-based health care and public health. Students will have the opportunity to gain practical public health exposure and mentoring in clinical, research, or community settings.

The Bachelor of Science in Public Health is available online only.

Admission to the Bachelor of Science in Public Health Program

1. Applicants for admission to the baccalaureate program in Public Health should apply initially to the Office of Admissions of Old Dominion University. Students cannot be accepted into the Bachelor of Science in Public Health program without first being admitted to the University. Admission to the University does not constitute admission to the Bachelor of Science in Public Health program. Students are admitted to the School of Community and Environmental Health after completion of lower-level General Education courses and BSPH program prerequisite courses.

2. Applicants for admission to the Bachelor of Science in Public Health program must complete all prerequisite courses with a grade of "C" or better prior to being admitted to the School of Community and Environmental Health. 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 Old Dominion University requirements. Students must be accepted to the program before enrolling in any 300- or 400-level required course.

3. Applicants must complete a Supplemental Application to be considered for admission to the BSPH program. The Bachelor of Science in Public Health Supplemental Application may be obtained directly from the School of Community and Environmental Health website, the College of Health Sciences Academic Advising Center or the Bachelor of Science in Public Health program website.
Students may be accepted into the program in Fall, Spring or Summer. The deadlines for applications and submission of all materials are May 15 for Fall term entry, October 15 for Spring term entry, and February 15 for Summer term entry. Admission to the program is competitive; admission decisions are determined by the admissions panel of the BSPH program on the basis of academic qualifications and experience.

Application Checklist
1. Apply and be admitted to the University as a degree-seeking undergraduate student. Transfer students should have a transfer credit evaluation completed by the transfer evaluation unit in the Office of Admissions.
2. Complete lower-division General Education requirements.
3. Complete prerequisite requirements with a grade of C or better; see major requirements below for specific prerequisite requirements for Public Health.
4. Maintain a minimum grade point average of 2.50.
5. Submit a Bachelor of Science in Public Health program supplemental application directly to the BSPH program with photocopies of all previous college transcripts attached.

The admissions panel will consider and review all materials submitted as part of the admissions packet to the program. Applicants will be evaluated on the basis of their Statement of Purpose, work experience (if applicable), and strength of recommendations along with the grade point average (GPA). Though GPA is not the sole criterion for admission, a minimum grade point average of 3.00 or higher makes the applicant most competitive.

Applicants will be formally notified of admission status in two weeks after the application deadline and will be advised by an assigned advisor. Students not admitted will receive notice and should pursue academic advising at the College of Health Sciences Academic Advising Center.

For additional information on the curriculum or admission requirements, please contact: Program Director (bsp@odu.edu) or College of Health Sciences Advising Center (hsadvising@odu.edu).

Continuance and Readmission Policy
In addition to the Old Dominion University continuance policies in this catalog, the following policies are specific to all declared majors in the BSPH Program:
1. A grade of C (2.00) or better is required in all BSPH courses to continue in the program.
2. A student who earns a grade of D or F 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 BSPH program.
4. A BSPH student who fails a BSPH course and is readmitted to the BSPH program is allowed to repeat the failed course only once during the next course offering.
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 BSPH major only once.

Internship (Capstone Experience)
The internship (capstone experience) (CHP 468) is a three-credit pass/fail course that serves as the capstone experience for students pursuing the Bachelor of Science in Public Health program. It is a planned, supervised, and evaluated 200-hour work experience under the direction of the internship coordinator. The policies, guidelines, and processes followed by the coordinator and students are delineated in the Internship Manual provided to students when they enroll in the program. The internship provides the opportunity for students to integrate their academic work into experiential learning. The experience will allow a student to gain basic job entry or advanced skills by working with experienced public health or healthcare professionals in a public or private organization. Students may select the internship site or they may seek guidance from faculty about possible sites.

Internships must be planned and approved during the penultimate semester of coursework at ODU. This is imperative as the foundational skills and concepts are achieved during the span of entire coursework at ODU. Internships should be sought and undertaken in an organization, agency, department or community that provides planning and/or services that are relevant to the core areas of public health. Any student who plans to organize an internship without the appropriate foundation may be at a disadvantage in the organizations in which internships are undertaken. All students are strongly encouraged to complete an internship within their major, i.e. public health. The internship experience and course address the relevance of developing skills and competencies as required for the future of public health practitioners.

As part of the course assessment, students are required to compile an electronic portfolio (ePortfolio). The ePortfolio is a collection of work completed by the student during the internship and can be used to present the student’s “professional” or digital self to others. In addition to submitting an ePortfolio, students must submit a comprehensive attendance record that covers the entire internship period.

A criminal background check and proof of vaccination status may be required of students prior to beginning the internship, if required by participating organization.

Students who do not pass the internship in the first attempt will have the opportunity to repeat the course twice. If they are unsuccessful on their final attempt, they will be unable to earn the Bachelor of Science in Public Health.

Requirements for the Bachelor of Science in Public Health
Prerequisite requirements are completion of all lower-division general education courses and completion of ENGL 110C, BIOL 121N, BIOL 122N, BIOL 123N, BIOL 124N, MATH 162M, STAT 130M with a grade of C or higher prior to submission of the BSPH program application. Students must be admitted to the program by the Program Director prior to starting BSPH major courses.

General Education Courses

<table>
<thead>
<tr>
<th>Lower-Division General Education</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (grade of C or better required in both courses; ENGL 110C must be completed prior to submission of the BSPH program application)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (met in the major by CHP 400, CHP 450, and CHP 415W or CHP 430W)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (MATH 162M) must be completed with a C or better prior to submission of the BSPH program application)</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture*</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research (HLTH 120G preferred)</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics (met in the major by CHP 400)</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science (BIOL 121N/BIOL 122N and BIOL 123N/BIOL 124N required; must be completed with a C or better prior to submission of the BSPH program application)</td>
<td>8</td>
</tr>
<tr>
<td>Human Behavior (met by PSYC 201S or SOC 201S in foundations coursework)</td>
<td>3</td>
</tr>
<tr>
<td>Impact of Technology (met in the major by CHP 485)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 29-35

* May be met prior to matriculation.
Health Sciences Foundation Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BIOL 240</td>
<td>Fundamentals of Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>or BIOL 250</td>
<td>Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 303</td>
<td>Genetics</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 122N</td>
<td>Foundations of Chemistry I Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 124N</td>
<td>Foundations of Chemistry II Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 211</td>
<td>Organic Chemistry I Lecture</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 111N</td>
<td>Introductory General Physics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 201S</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>or SOC 201S</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>STAT 130M</td>
<td>Elementary Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 28

* CHEM 103 may be needed as prerequisite.
** PSYC 201S or SOC 201S meets the Human Behavior Way of Knowing in lower-division General Education.

Major Course Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 328</td>
<td>Public Health Science</td>
<td>3</td>
</tr>
<tr>
<td>CHP 335</td>
<td>Population Health</td>
<td>3</td>
</tr>
<tr>
<td>CHP 360</td>
<td>Introduction to Global Health</td>
<td>3</td>
</tr>
<tr>
<td>CHP 390</td>
<td>The U.S. Healthcare Delivery System</td>
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</tr>
<tr>
<td>CHP 400</td>
<td>Ethics in Health Administration</td>
<td>3</td>
</tr>
<tr>
<td>CHP 415W</td>
<td>Critical Issues in Public/Community Health Administration</td>
<td>3</td>
</tr>
<tr>
<td>or CHP 430W</td>
<td>Community Health Resources and Health Promotion</td>
<td>3</td>
</tr>
<tr>
<td>CHP 445</td>
<td>Health Services Research Methods</td>
<td>3</td>
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<td>CHP 450</td>
<td>Public and Community Health Administration</td>
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<tr>
<td>CHP 461</td>
<td>Managerial Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>CHP 485</td>
<td>Health Informatics</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 301</td>
<td>Principles of Environmental Health Science</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 448</td>
<td>Epidemiology and Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 403W</td>
<td>Social and Behavioral Aspects of Public Health</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 415</td>
<td>One Health-One Medicine</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 421</td>
<td>Leadership in Public Health</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 422</td>
<td>Health, Culture and Diversity-Reducing Disparities in Public Health</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 441</td>
<td>Multi-Disciplinary Approaches to Suicide Prevention</td>
<td>3</td>
</tr>
<tr>
<td>or CHP 475</td>
<td>Healthcare Marketing</td>
<td></td>
</tr>
</tbody>
</table>

Capstone Course

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 468</td>
<td>Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 54

* CHP 400, CHP 450, and CHP 415W or CHP 430W meet the general education oral communication requirement; in addition CHP 400 meets the general education philosophy and ethics requirement.
** CHP 485 meets the general education impact of technology requirement.

Upper-Division General Education

Students may choose one of the following options to fulfill their upper-division general education requirement.

- Option A: A University-approved disciplinary minor, second degree or second major, with advisor approval.
- Option B: A University-approved interdisciplinary minor.
- Option C: International business and regional courses or an approved certification program.
- Option D: Six hours of upper division courses outside the College of Health Sciences.

Electives

Electives may be needed to achieve the minimum 120 hours required for the baccalaureate degree.

Graduation Requirements

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, a 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 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.

Total: 120 credit hours

Four-Year Plan - Public Health

- BSPH (http://catalog.odu.edu/undergraduate/collegeofhealthsciences/communityenvironmentalhealth/publichealth-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Dental Hygiene

Web Site: http://www.odu.edu/dental

Ann Bruhn, Interim Chair

The Gene W. Hirschfeld School of Dental Hygiene offers programs leading to the degree of Bachelor of Science in Dental Hygiene (entry level and post-licensure) 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 in good academic standing during the last semester of the Bachelor of Science in Dental Hygiene entry-level program may be approved by the School Chair to take the National Board Examination for Dental Hygiene and a regional licensing board examination. A successful outcome on both examinations is required to practice dental hygiene.

The baccalaureate post-licensure curriculum is designed for the licensed dental hygienist who graduated with an associate degree or certificate.
from an accredited dental hygiene program and would like to pursue a baccalaureate degree 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 a current background check, 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 first to the Old Dominion University Office of Admissions by December 1 and to the School of Dental Hygiene through the American Dental Education Association’s Dental Hygiene Centralized Application Service (DHCA) by February 1. 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.

Admission to the program is competitive. Admission decisions are determined by the BS Entry-level Admissions 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. Submit application to Old Dominion University with official high school and college transcripts, and required credentials to the Office of Admissions by December 1 prior to the anticipated entry year.
2. Submit all materials (official high school and college transcripts, two professional recommendation forms, dental experience background information, and dental facility observation verification form) to the DHCA by February 1. All materials must be posted to the DHCA by February 1 to be compiled and transmitted to the School of Dental Hygiene Admissions Committee for review and decision. A list of all needed materials will reside on the DHCA website (http://www.adea.org/dhcas.aspx).
3. Prerequisite courses for program entry must be completed with a minimum grade of C or better prior to starting the dental hygiene major. (A grade of C- in prerequisites will not transfer to the School of Dental Hygiene). Completion of lower-level General Education requirements will make the applicant more competitive in the application process.
4. A minimum overall grade point average (GPA) of 3.00 and a Science GPA of 3.30 will make the applicant competitive.
5. Applicants must complete at least 12 hours of documented observation in a dental facility to familiarize themselves with oral health delivery.

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 BS Entry-level Program Director. 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 Old Dominion University 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 by Old Dominion University School of Dental Hygiene.

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

1. Receive at least a "C" in the course being requested.
2. Provide transcripts from the institution awarding course credit to the Admission Chair of the School of Dental Hygiene.
3. At the option of the Dental Hygiene Admission Chair, provide available course materials for evaluation including course syllabus and course description.

B. Procedure

1. 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.
2. 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:
   a. Award course credit.
   b. Require course(s) be taken for pass/fail.
   c. Require course(s) be taken for credit.
3. 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 for Entry-level Program

Students must complete the entire curriculum of 120-126 credit hours (depending upon foreign language exemption) to meet degree requirements. All Dental Hygiene courses with the prefix DNTH are to 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.

Students desiring to enroll in the BSDH Entry-level Dental Hygiene program should complete the following courses prior to beginning the dental hygiene major.

Old Dominion University  272
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Term Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
<td>* 3</td>
</tr>
<tr>
<td>ENGL 211C</td>
<td>English Composition</td>
<td>* 3</td>
</tr>
<tr>
<td>STAT 130M</td>
<td>Elementary Statistics</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 201S</td>
<td>Introduction to Psychology</td>
<td>* 3</td>
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<tr>
<td>SOC 201S</td>
<td>Introduction to Sociology</td>
<td>3</td>
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<td>CHEM 105N</td>
<td>Introductory Chemistry</td>
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<td>CHEM 106N</td>
<td>Introductory Chemistry Laboratory</td>
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<td>BIOL 103</td>
<td>Basic Bacteriology</td>
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<td>BIOL 240</td>
<td>Fundamentals of Anatomy and Physiology I</td>
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<tr>
<td>or</td>
<td>BIOL 250</td>
<td>Human Anatomy and Physiology I</td>
</tr>
<tr>
<td>or</td>
<td>BIOL 241</td>
<td>Fundamentals of Anatomy and Physiology II</td>
</tr>
<tr>
<td>or</td>
<td>BIOL 251</td>
<td>Human Anatomy and Physiology II</td>
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<td>CHP 318</td>
<td>Principles of Nutrition</td>
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<td>Human Creativity</td>
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<td>Interpreting the Past</td>
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<td>Information Literacy and Research</td>
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<tr>
<td>Oral Communications/Public Speaking</td>
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<td>0</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>**</td>
<td>0</td>
</tr>
<tr>
<td>Upper-Division General Education***</td>
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<td></td>
</tr>
<tr>
<td>Upper-Division &quot;T&quot; Course from outside the College of Health Sciences (meets upper-division general education)</td>
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<td></td>
</tr>
</tbody>
</table>

Total Hours: 49-55

* All prerequisite courses must be completed with a grade of C (2.00) or better. A grade of C- will not transfer into the School of Dental Hygiene.

** Information Literacy/Research, Oral Communications and Philosophy/Ethics will be met in the major.

*** Upper-Division General Education courses must be outside of the College of Health Sciences.

### Major Requirements

#### Third Year

<table>
<thead>
<tr>
<th>Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
<th>Summer Term</th>
<th>Hours</th>
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<tbody>
<tr>
<td>DNTH 300</td>
<td>4</td>
<td>DNTH 305</td>
<td>3</td>
<td>DNTH 316</td>
<td>3</td>
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<td>DNTH 301</td>
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<td>DNTH 306</td>
<td>3</td>
<td>DNTH 317</td>
<td>2</td>
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<tr>
<td>DNTH 302</td>
<td>3</td>
<td>DNTH 307</td>
<td>3</td>
<td>Option D: six hours of elective upper-division courses from outside the College of Health Sciences (includes upper-division &quot;T&quot; course)</td>
<td>0-6</td>
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</tbody>
</table>

DNTH 303: 3
DNTH 304: 3
DNTH 310: 3
DNTH 308: 3
DNTH 309: 2
DNTH 310: 3

#### Fourth Year

<table>
<thead>
<tr>
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<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNTH 410</td>
<td>3</td>
<td>DNTH 416</td>
<td>3</td>
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</tbody>
</table>

Total credit hours: 71-77

* Grade of C or better is required in all DNTH courses

### 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, 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 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.

### Four-Year Plan - Dental Hygiene - BS

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### 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 or infraction in a background check will be cause for dismissal from the B.S.D.H. program.

One finding of a violation of the Code of Student Conduct for academic integrity is grounds for removal from the dental hygiene 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 Post-licensure Online Program (for Registered Dental Hygienist)**

The Bachelor of Science in Dental Hygiene (B.S.D.H.) Post-licensure Online 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. post-licensure online program is available on-line or as a hybrid of on-line and on-campus courses.

**Admission to the Bachelor of Science Post-licensure Online Program**

A licensed dental hygienist educated at another institution who desires to pursue the Bachelor of Science in Dental Hygiene should apply and accepted by Old Dominion University as an upper-level dental hygiene transfer student. Formal acceptance as a dental hygiene major will be determined by the Admissions Committee for the B.S.D.H. Post-licensure Online Program.

Transfer applicants must meet the following requirements:

1. Graduation from an accredited dental hygiene program.
2. Successful completion of all 100-200 level general education and department requirements.
3. Submission of application to the Old Dominion University Office of Admissions including official high school and college transcripts.
4. Acceptance to Old Dominion University.
5. Submission of School of Dental Hygiene B.S.D.H. Post-licensure application with the following items:
   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 healthcare provider CPR/AED certificate/biennially requested.
   e. Current resume
6. Applicants who hold an associate of applied science degree must meet the University’s lower-level General Education requirements.

**Curriculum for B.S.D.H. Post-licensure Online Program**

**Requirements**

Transfer students must satisfy the following:

1. Certificate or associate degree in dental hygiene from an accredited dental hygiene program
2. Students without credit for ENGL 110C must 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 Post-licensure Online program.
4. Successful completion of department requirements or the equivalent. A grade of (C) or better is required in all courses:
   - STAT 130M Elementary Statistics * 3
   - CHEM 105N & CHEM 106N Introductory Chemistry and Introductory Chemistry Laboratory * 4
   - B IOL 103 Basic Bacteriology * 4
   - B IOL 240 Fundamentals of Anatomy and Physiology I * 4
   - or
   - B IOL 250 Human Anatomy and Physiology I *
   - B IOL 241 Fundamentals of Anatomy and Physiology II * 4
   - or
   - B IOL 251 Human Anatomy and Physiology II *
   - PSYC 201S Introduction to Psychology * or PSYC 203S Lifespan Development 3
   - SOC 201S Introduction to Sociology * 3
5. Successful completion of 15 credits at the upper division to include a minimum of six credits to meet the Upper-Division General Education requirement.
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. Successful 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 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. Post-licensure Online program. A grade of C (2.00) or better is required in all DNTH courses for graduation. A cumulative grade point average of a C (2.00) or better is required to continue in the dental hygiene program. A grade of D (1.00) or F in any dental hygiene course will not be considered in good academic standing in the major and will result in an evaluation of the individual student's academic progress on a case-to-case basis. Dental hygiene students will be allowed to repeat a failed course only once.

One finding of a violation of the Code of Student Conduct for academic integrity is grounds for removal from the dental hygiene 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.

**Linked Bachelor of Science to Master of Science Program**

Entry-level and B.S.D.H. Post-licensure online 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 linked 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. Taking linked coursework does not guarantee admission into the master's program. Students must formally apply and be accepted into the dental hygiene graduate program. Students in the linked program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Consult with the graduate program director 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. 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
Web Site: http://www.odu.edu/mdts
Harold Riethman, 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 Laboratory Science (formerly medical technology) and Bachelor of Science in Nuclear Medicine Technology and a post-baccalaureate certificate in cytotechnology. Students may also pursue a concentration in cytotechnology through the Bachelor of Science in Health Sciences degree program. In addition, the school offers a minor in medical laboratory science (formerly medical technology) and a degree completion program for certified medical laboratory technicians (MLT) pursuing a baccalaureate degree. For those seeking a graduate certificate in molecular diagnostics, please refer to the ODU Graduate Catalog.

Bachelor of Science in Medical Laboratory Science (formerly Medical Technology)
http://www.odu.edu/mdts/medical-laboratory-science
Program Director:
Barbara Kraj, PhD, MLS(ASCP)CMMBCM
College of Health Sciences
4608 Hampton Blvd, Rm 2122
Phone: 757-683-6039
E-mail: bkraj@odu.edu (bkraj@odu.edu757-683-6039)
The medical laboratory scientist/medical technologist plays 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 (blood banking), and molecular pathology.

The program has been continually accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 5600 N River Road, Suite 720, Rosemont, IL 60018, 773 714-8880. Due to accreditation, upon successful completion of the program graduates are eligible to take the national certification exam for Medical Laboratory Scientist, administered by the American Society for Clinical Pathology, MLS(ASCP).

Admission
Admission to the University does not constitute admission to the medical laboratory science 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. Additionally, applicants must be in good academic standing (cumulative GPA 2.0 or greater). 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 laboratory science/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 may be allowed to take on-campus medical laboratory science/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
STAT 130M Elementary Statistics 6

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 General Biology I & BIOL 122N and General Biology I Lab
CHEM 121N Foundations of Chemistry I Lecture & CHEM 122N 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; meets upper-division general education) 3

Total Hours 45-51

* CHEM 103 may be needed as a prerequisite.

Departmental Requirements

BIOL 250 Human Anatomy and Physiology I 8
& BIOL 251 and Human Anatomy and Physiology II

CHEM 211 Organic Chemistry I Lecture 5
& CHEM 212 and Organic Chemistry I Laboratory

Students must complete the following courses prior to entering the Medical Laboratory Science/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

### Third Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
<th>Summer Term</th>
<th>Hours</th>
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<td>MLS 320</td>
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<td>MLS 307</td>
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<td>MLS 454</td>
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18   18   6

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<th>Second Term</th>
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<td>from fourth year second term courses</td>
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<td></td>
<td>6</td>
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Total credit hours: 63

**Note:** Junior year core courses that are over three years old prior to starting a rotation (practicum course) must be reevaluated by the faculty member at ODU in charge of the specialty, in both theoretical knowledge and technical skills. Reevaluation may result in the need to repeat and/or audit out-of-date courses. This applies to both part-time and returning students.

### 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, 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 ENGL 221C or ENGL 251C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

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### Four-Year Plan - Medical Laboratory Science - BSMLS

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Bachelor of Science in Medical Laboratory Science/Medical Technology—Degree Completion Program

The Bachelor of Science in Medical Laboratory Science degree completion program (previously medical technology) is available for graduates of accredited associate degree university and hospital-based or military Medical Laboratory Technician (MLT) programs. MLT certification is required for admission. The curriculum is designed to meet the needs of local and distant practitioners. Program courses are delivered online to accommodate the schedules of working students. Distance learning enrollment coordinators for health sciences programs may be reached at healthsciencesonline@odu.edu (healthsciencesonline@odu.edu).

Admission to the University does not constitute admission to the medical laboratory science/medical technology degree completion program. All program prerequisite courses must be completed with a grade of C (2.00) or better. Additionally, applicants must be in good academic standing (cumulative GPA 2.0 or greater).

For consultation and evaluation of eligibility for the degree completion program contact:

Ellie Luethy, MHS, MT(ASCP)
Education Coordinator
eluethy@odu.edu
(757) 683-3016

### 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

- 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

- 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

- BIOL 121N General Biology I
- & BIOL 122N General Biology I Lab
- CHEM 121N Foundations of Chemistry I Lecture
- & CHEM 122N Foundations of Chemistry I Laboratory
- CHEM 123N Foundations of Chemistry II Lecture
- & CHEM 124N Foundations of Chemistry II Laboratory
- Human Behavior 3
Impact of Technology (any upper-division T course outside the College of Health Sciences; meets upper-division general education) 3

Total Hours 45-51

**Departmental Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 250 &amp; BIOL 251</td>
<td>Human Anatomy and Physiology I and Human Anatomy and Physiology II</td>
<td>8</td>
</tr>
<tr>
<td>CHEM 211 &amp; CHEM 212</td>
<td>Organic Chemistry I Lecture and Organic Chemistry I Laboratory</td>
<td>5</td>
</tr>
</tbody>
</table>

Students must complete the following courses prior to entering the Medical Laboratory Science/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 Prior Learning Assessment Credit from MLT Training Program) 17-23

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS 309</td>
<td>Medical Bacteriology</td>
<td>3</td>
</tr>
<tr>
<td>MLS 310</td>
<td>Urinalysis and Body Fluids</td>
<td>1</td>
</tr>
<tr>
<td>MLS 311</td>
<td>Hematology</td>
<td>3</td>
</tr>
<tr>
<td>MLS 315</td>
<td>Clinical Laboratory Diagnosis</td>
<td>3</td>
</tr>
<tr>
<td>MLS 324</td>
<td>Clinical Instrumentation and Electronics</td>
<td>3</td>
</tr>
<tr>
<td>MLS 326</td>
<td>Immunohematology</td>
<td>3</td>
</tr>
<tr>
<td>MLS 340</td>
<td>Medical Parasitology, Mycology, and Virology</td>
<td>1</td>
</tr>
<tr>
<td>MLS 351</td>
<td>Clinical Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>MLS 402</td>
<td>Survey of Clinical Molecular Techniques</td>
<td>2</td>
</tr>
<tr>
<td>MLS 403W</td>
<td>Management in the Clinical Setting</td>
<td>3</td>
</tr>
<tr>
<td>MLS 440</td>
<td>Statistical Applications and Data Analysis in the Clinical Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>MLS 441</td>
<td>Clinical Hematology Competencies</td>
<td>1</td>
</tr>
<tr>
<td>MLS 442</td>
<td>Clinical Microbiology Competencies</td>
<td>1</td>
</tr>
<tr>
<td>MLS 443</td>
<td>Clinical Chemistry Competencies</td>
<td>1</td>
</tr>
<tr>
<td>MLS 444</td>
<td>Clinical Blood Bank Competencies</td>
<td>1</td>
</tr>
<tr>
<td>MLS 445</td>
<td>Advanced Clinical Practicum</td>
<td>3</td>
</tr>
<tr>
<td>MLS 457</td>
<td>Medical Laboratory Science Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Hours 53-59

**Note:** Junior year core courses that are over three years old prior to graduation, must be reevaluated by the faculty member at ODU in charge of the specialty, in both theoretical knowledge and technical skills. Reevaluation may result in the requirement to repeat and/or audit out-of-date courses. This applies to both part-time and returning Degree Completion Program students.

**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, 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 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 Medical Laboratory Science (formerly Medical Technology)**

A minor in medical laboratory science requires a minimum of 12 semester hours of 300/400-level MLS 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-MLS 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**

http://www.odu.edu/mdts/nuclear-medicine

Scott R. Sechrest, 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. All applicants must be in good academic standing (cumulative GPA of 2.0 or greater).

**Requirements**

**Lower-Division General Education**

**Skills**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>MATH 102M</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>或 MATH 103M</td>
<td>College Algebra with Supplemental Instruction</td>
<td>3</td>
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</table>

**Mathematics** 6

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>STAT 130M</td>
<td>Elementary Statistics</td>
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**Language and Culture** 0-6

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tr>
<td>Information Literacy and Research</td>
<td>3</td>
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</table>

**Ways of Knowing**
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
Impact of Technology 3
HIST 304T History of Medicine, Disease, and Health Technology (or upper-division T course outside the College of Health Sciences; meets upper-division general education)

Total Hours 52-58

Departmental Requirements

BIOL 240 or BIOL 250 Fundamentals of Anatomy and Physiology I 4
BIOL 241 or BIOL 251 Fundamentals of Anatomy and Physiology II 4

Students must complete the following courses (or equivalent) prior to entering the nuclear medicine technology Program: BIOL 240 or BIOL 250 and BIOL 241 or BIOL 251, CHEM 105N, CHEM 106N, CHEM 107N and CHEM 108N, PHYS 101N and PHYS 102N, and MATH 102M and STAT 130M.

Total Hours 8

Major Course Requirements

Third Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
<th>Summer Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>NMED 300</td>
<td>3</td>
<td>NMED 332</td>
<td>4</td>
<td>NMED 440</td>
<td>8</td>
</tr>
<tr>
<td>NMED 331</td>
<td>4</td>
<td>NMED 335</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NMED 401</td>
<td>4</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>7</td>
<td>NURS 393</td>
<td>2</td>
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Fourth Year

<table>
<thead>
<tr>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>NMED 450</td>
<td>8</td>
<td>NMED 460</td>
<td>8</td>
</tr>
<tr>
<td>NMED 402</td>
<td>4</td>
<td>NMED 410</td>
<td>3</td>
</tr>
<tr>
<td>NMED 403</td>
<td>3</td>
<td>NMED 475W</td>
<td>3</td>
</tr>
</tbody>
</table>

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

Requirements for Graduation

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 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.

Four-Year Plan - Nuclear Medicine Technology - BSNMT (http://catalog.odu.edu/undergraduate/collegeofhealthsciences/medicaldiagnostictranslationalsciences/nuclearmedtech-bsnmt-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Cytotechnology Concentration—Bachelor of Science in Health Sciences

http://www.odu.edu/mdts/cytotechnology

Deborah Krzyzaniak, M.S., C.T.(ASCP), S.C.T.(ASCP) Program Director

The School of Medical Diagnostic and Translational Sciences offers a program in cytotechnology through the Bachelor of Science in Health Sciences. The program offers a first and second degree option as well as a post-baccalaureate degree option.

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 preparation, molecular, FISH, flow cytometry techniques, and fine needle aspiration cytology.

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; website: www.caahep.org, in association with the American Society of Cytopathology.

Theory is reinforced through an integrated clinical phase that allows the student direct experience in a hospital or lab setting providing additional training in screening techniques and diagnostic procedures. Students are required to obtain a minimum grade of 70 percent or C in all didactic coursework. Clinical coursework requires a minimum passing grade of 80, 85 and 90 percent during the first, second and third internship, respectively. Graduates are eligible to sit for the national board exam given by the ASCP (American Society of Clinical Pathology) upon successful completion of the program.

Application to the cytotechnology program must be submitted by March 15 for the fall semester. Competitive applicants should have an overall GPA of 2.8 or higher.
### Requirements

#### Lower-Division General Education

##### Skills

<table>
<thead>
<tr>
<th>Written Communication</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C English Composition (grade of C or better required)</td>
<td></td>
</tr>
<tr>
<td>ENGL 211C English Composition (grade of C or better required)</td>
<td></td>
</tr>
</tbody>
</table>

##### Oral Communication

Mathematics 3

- MATH 102M College Algebra
  - or MATH 103M College Algebra with Supplemental Instruction

Language and Culture 0-6

- HLTH 120G Information Literacy for Health Professions (preferred)

##### Ways of Knowing

| Human Creativity | 3 |
| Interpreting the Past | 3 |
| Literature | 3 |
| Philosophy and Ethics | 3 |

- PHIL 345E Bioethics (recommended)

The Nature of Science 16

- 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

##### 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; meets upper-division general education)

Total Hours 46-52

* Met in the major with CYTO 424 and CYTO 497.

#### Departmental Requirements

| BIOL 240 Fundamentals of Anatomy and Physiology I | 4 |
| BIOL 250 Human Anatomy and Physiology I |
| BIOL 241 Fundamentals of Anatomy and Physiology II | 4 |
| BIOL 251 Human Anatomy and Physiology II |
| 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 240 or BIOL 250 and BIOL 241 or BIOL 251, BIOL 103, CHEM 105N and CHEM 106N, CHEM 107N and CHEM 108N and the nine hours from the health sciences core courses.

Total Hours 12

#### Major Course Requirements

<table>
<thead>
<tr>
<th>First Semester:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYTO 404 General Pathology</td>
</tr>
<tr>
<td>CYTO 407 Clinical Histology (Strongly Recommended)</td>
</tr>
</tbody>
</table>

| MDTS 401 Molecular Diagnostics Laboratory | 3 |
| CHP 450 Public and Community Health Administration | 3 |

**Second Semester:**

| CYTO 403 Gynecological Screening Laboratory | 3 |
| CYTO 405 Normal Gynecological Cytology | 3 |
| CYTO 415 Abnormal Gynecological Cytology | 4 |
| CYTO 424 Respiratory Cytology | 4 |
| CYTO 428W Cytopreparatory Techniques and Procedures | 3 |
| CYTO 458 Cytology Internship I | 3 |

**Third Semester:**

| CYTO 442 Gastro-Intestinal Cytology | 2 |
| CYTO 444 Genitourinary Cytology | 2 |
| CYTO 445 Breast Cytology | 2 |
| CYTO 446 Body Fluids Cytology | 3 |
| CYTO 448 Non-Epithelial Cytology | 1 |
| CYTO 468 Cytology Internship II | 4 |

**Fourth Semester:**

| CYTO 455 Fine Needle Aspiration | 6 |
| CYTO 478 Cytology Internship III | 8 |
| CYTO 497 Cytology Senior Seminar | 1 |

Total Hours 61

#### 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, 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 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.

#### Four-Year Plan - Cytotechnology Concentration - BSHS

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

#### 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.

#### Nursing

http://www.odu.edu/nursing
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 pre-licensure undergraduate curriculum admits a cohort of students each fall semester. All nursing courses in the major are completed in five consecutive semesters (fall, spring, summer, fall, spring). The curriculum incorporates current recommendations for undergraduate nursing education and is designed to get graduates into the workforce and enrolled in graduate nursing programs more quickly. The number of credit hours required for the major is 66 and the number of total credits required to graduate with a Bachelor of Science in Nursing is 120. Students applying to the prelicensure curriculum are required to have all lower division departmental and general education courses fully completed before admission to the nursing major; there are no exceptions to this requirement. The minimum GPA for admission to the prelicensure program is 3.00. Please note that for the past several years, a competitive GPA for students admitted to the program has been a 3.5 GPA or higher.

For additional information on the curriculum or admission requirements, please contact:

• Chief Academic Advisor for the Undergraduate Nursing Program, Dr. Janice Hawkins (jhawkins@odu.edu); or
• College of Health Sciences Advising Center (http://www.odu.edu/hs/advising)

**Bachelor of Science in Nursing**

Amy Lee, Undergraduate RN-BSN Curriculum Suzanne Van Orden, Undergraduate Prelicensure BSN Curriculum 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 or currently enrolled in such programs and desiring to earn the B.S.N. degree (post-licensure). The prelicensure curriculum is offered in a 21-month year-round schedule. Upon satisfactory completion of the program, a graduate is eligible to take the National Council Licensure 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 in an on-line program of study. 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. 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: https://www.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 15 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.
7. A minimum of 30 credit hours that apply to the BSN must be completed before applying to the program.
8. If admitted, all required lower division departmental and general education courses must be completed prior to the enrollment date of the nursing curriculum.

**Postlicensure Admission**

Postlicensure applicant review is based on the following criteria:

1. Admission to the University
2. Successful completion of the lower division departmental and general education courses
3. Grade point average
4. Unencumbered RN license

**Concurrent Option**

The Concurrent Enrollment option 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 completed all lower division departmental and general education courses for the BSN. Students must be enrolled in an RN program at a partner institution.

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 option 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 toward completion of the Bachelor of Science in Nursing degree. Fall, Spring and Summer enrollment is available.

The nursing application is supplementary to the University application.
Concurrent Option Admission
Concurrent option admission eligibility is based on the following criteria:

1. Admission to the University
2. Admission to a prelicensure nursing program of a partner institution
3. Grade point average
4. Completion of all lower division departmental and general education courses.

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 photocopied 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 course 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. 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 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 enroll in Principles of Practice: Role Transition (NURS 481).
  • Since the Preceptorship clinical experience does not include direct faculty supervision while providing patient care, no student will be allowed to enroll in Principles of Practice: Role Transition if they are on Clinical Notice.
  • Students must meet all stipulations in the “Plan for Success” and be released from Clinical Notice prior to beginning the preceptorship clinical experience.

**Dismissal**

Not withstanding 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. 67)

**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. Acceptance is limited to approximately 10% of the class size.

Application to the Honors Program may be made by prelicensure students who meet the following requirements:

1. A minimum GPA of 3.50.
2. Faculty recommendation.

Applications will be distributed to prelicensure 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. NURS 387 in place of NURS 363.
   b. NURS 491 in place of NURS 481.
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.

**Curriculum for Prelicensure Students**

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. Students applying to the nursing major should complete all of the non-nursing courses prior to beginning the major. Nursing courses are taught in fall, spring and summer semesters. Summer enrollment is required.

Each semester in the program students are assessed a non-refundable program fee of $375. This fee is posted to the student’s account to be paid with tuition. The fee covers a variety of program-related expenses outside of tuition and books.

Students desiring to enroll in the program should complete the following courses prior to beginning the nursing major:

- **ENGL 110C** English Composition (*) 3
- **ENGL 211C** English Composition (or ENGL 221C or ENGL 231C) (*) 3
- **STAT 130M** Elementary Statistics 3
- **PSYC 203S** Lifespan Development 3
- **SOC 201S** Introduction to Sociology (*) 3
- **CHEM 105N** Introductory Chemistry (*) 3
- **CHEM 106N** Introductory Chemistry Laboratory (*) 1
- **BIOL 103** Basic Bacteriology 4
- **BIOL 240** Fundamentals of Anatomy and Physiology I 4
- **or**
  - **BIOL 250** Human Anatomy and Physiology I (*) 4
  - **BIOL 241** Fundamentals of Anatomy and Physiology II 4
- **or**
  - **BIOL 251** Human Anatomy and Physiology II (*) 4

Literature Way of Knowing 3

### Foreign Language

- **0-6**
  - Human Creativity Way of Knowing 3
  - Interpreting the Past Way of Knowing 3
  - Philosophy and Ethics Way of Knowing 3
  - Upper-Division T Course from outside the College of Health Sciences; meets upper-division general education 3
  - Upper-Division General Education Elective from outside the College of Health Sciences 3
  - Elective Credits 5

**Total Hours** 54-60

* All prerequisite courses must be completed with a grade of C (2.00) or better (not a C-) for transfer credit to Old Dominion University. A minimum GPA of 3.0 is required for consideration for admission to the prelicensure program. A grade of B or better makes the applicant more competitive.

See 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.

All Nursing courses must be completed as scheduled in the terms in the plan of study.

<table>
<thead>
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<th>First Year</th>
<th>First Term</th>
<th>Hours</th>
<th>Second Term</th>
<th>Hours</th>
<th>Summer Term</th>
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<td>NURS 323</td>
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<td>NURS 363</td>
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<td>14</td>
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</table>

**Total credit hours: 66**

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.
**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**

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 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.

**Four-Year Plan - Nursing Prelicensure - BSN**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Post-Licensure Curriculum (for Registered Nurses and Concurrent Option Students)**

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 in an on-line program of study. Most students enroll on a part-time basis. Students may start the major in the fall, spring or summer semester.

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 or concurrent enrollment in an RN program at a partner institution. A part-time and full-time sequence of major courses is offered. To meet degree requirements, students must complete the entire curriculum of 120-126 credits (depending upon foreign language exemption). Based upon prior learning, RN licensure and successful progression in the major, registered nurse students are granted 33 prior learning credits in nursing.

**Major Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BIOL 241</td>
<td>Fundamentals of Anatomy and Physiology II</td>
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<td>or</td>
<td>BIOL 251 Human Anatomy and Physiology I</td>
<td>4</td>
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<tr>
<td></td>
<td>Literature Way of Knowing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Foreign Language</td>
<td>0-6</td>
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<tr>
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<td>Human Creativity Way of Knowing</td>
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<td></td>
<td>Interpreting the Past Way of Knowing</td>
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</tr>
<tr>
<td></td>
<td>Philosophy and Ethics Way of Knowing</td>
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<td>Upper-Division T Course from outside the College of Health Sciences, meets upper-division general education</td>
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<td></td>
<td>Upper-Division General Education Elective from outside the College of Health Sciences</td>
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<tr>
<td></td>
<td>Elective Credits</td>
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</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>54-60</td>
</tr>
</tbody>
</table>

*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 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.

**Requirements for Graduation**

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 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.

**Four-Year Plan - Nursing - Post-licensure - BSN (for Registered Nurses and Concurrent Option Students with AAS in Nursing)** (http://catalog.odu.edu/undergraduate/collegeofhealthsciences/nursing/nursingconcurrent-bsn-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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**

The School of Nursing computer competency requirements are located on the School's website. Students may review the computer competency requirements at http://www.odu.edu/content/dam/odu/col-dept/school-nursing/docs/school-of-nursing-computer-and-informatics-standards-statement.pdf.

**Technical Standards**

The School of Nursing technical standards and performance requirements are located on the School's website. Students may review the technical standards and performance requirements at http://www.odu.edu/content/dam/odu/col-dept/school-nursing/docs/school-of-nursing-technical-standards.pdf.
College of Sciences

Web Site: http://sci.odu.edu

Gail Dodge, Dean
Dayle Daines, Associate Dean for Research and Faculty Affairs
Craig Bayse, Interim 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, Computer Science, Mathematics and Statistics, Ocean, Earth and Atmospheric Sciences, and Physics cooperate with the Darden College of Education and Professional Studies 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

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<thead>
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<th>Subject</th>
<th>BS</th>
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Life Sciences

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Physical Sciences

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<tr>
<td>Computer Science</td>
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Medical School Joint Program in Medicine

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 for the program at the beginning of their sophomore year at Old Dominion University. Upon successful completion of requirements and graduation from Old Dominion University, a student accepted into 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 (ACT 28) and an overall and science GPA from ODU of at least 3.40 at the time of application. Students who do not meet these minimum requirements will not be considered for the program.

4. It is recommended that students complete one year of general chemistry and the first semester of organic chemistry by the end of the first semester of their sophomore year.

5. Students selected for the joint program are required to take the MCAT and attain a minimum combined score at or above 503 (61st percentile) for admission to EVMS.

6. 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 SAT scores, and non-academic factors such as

Old Dominion University 286
volunteerism, leadership, and health care exposure, students will be nominated for the program.

7. Qualified applicants will be interviewed by members of a joint Old Dominion University/Eastern Virginia Medical School faculty committee.

8. 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 and participate in seminars, classes, and medical and/or research experiences associated with the program. 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.

9. 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.

10. Questions about the joint program in medicine should be directed to Reneldo Randall, 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 121N</td>
<td>General Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 122N</td>
<td>General Biology I Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 123N</td>
<td>General Biology II</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 124N</td>
<td>General Biology II Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
<td>8</td>
</tr>
<tr>
<td>&amp; CHEM 122N</td>
<td>Foundations of Chemistry I Laboratory</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 124N</td>
<td>Foundations of Chemistry II Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 211</td>
<td>Organic Chemistry I Lecture</td>
<td>6</td>
</tr>
<tr>
<td>&amp; CHEM 213</td>
<td>Organic Chemistry II Lecture</td>
<td></td>
</tr>
<tr>
<td>CHEM 212</td>
<td>Organic Chemistry I Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 214</td>
<td>Organic Chemistry II Laboratory</td>
<td></td>
</tr>
<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
<td>3</td>
</tr>
<tr>
<td>Three additional hours in English</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 162M</td>
<td>Precalculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 163</td>
<td>Precalculus II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 111N</td>
<td>Introductory General Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 112N</td>
<td>Introductory General Physics</td>
<td>4</td>
</tr>
<tr>
<td>COMM 101R</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 345E</td>
<td>Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>Electives (liberal arts and behavioral sciences)</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

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 Reneldo Randall, Associate Chair of the Prehealth Advisory Committee located in MGB 236, (757) 683-6790.

B.S. to M.B.A. (Master of Business Administration) Linked Program

The linked BS/MBA program is an early entry to the MBA program of study. The early-entry program is designed for well qualified non-business
undergraduate ODU students to start their MBA program prior to completing their undergraduate degree. Well qualified non-business undergraduate students may take MBA-level courses as early as three semesters prior to graduation and count up to 12 graduate credits toward their undergraduate degree. Students participating in the early-entry program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Early-entry program students should carefully consider their undergraduate degree program requirements when planning their course of study. Students in the early-entry program work in close consultation with the MBA Program Office to develop an individualized plan of study based on the required coursework outlined 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)

Students who have done exceptionally well in their undergraduate work may qualify for a GMAT waiver. These candidates will have:

1. Completed all lower-level general education requirements
2. Completed at least 24 credit hours at ODU with a cumulative GPA of at least 3.5
3. Achieved junior standing

**Admissions Procedure**

Students interested in the early-entry program should complete the GMAT at least two semesters prior to the semester in which they wish to enroll. Applications to the MBA program should be submitted online following published deadlines in order to begin coursework in the desired semester. When completing the application for admission, students need to select an official admission date that is the semester immediately following their anticipated undergraduate graduation.

Students interested in the program should contact the MBA Program Office as early as possible to discuss their plans for early entry. Once admitted to the program, the MBA program manager will act as the student’s co-advisor, along with the chief departmental advisor or chief discipline advisor in the student's undergraduate major. The MBA Program Office is located in 1026 Constant Hall. The phone number is 757-683-3585 and email is mbainfo@odu.edu.

**Requirements for the M.B.A.**

Admitted students may begin to complete courses from the MBA pre-core and/or core as soon as three semesters prior to anticipated undergraduate graduation. Twelve graduate credit hours can count toward the undergraduate degree and can meet upper-level General Education requirements. Students will work closely with their undergraduate advisor to confirm what MBA coursework can be used for the fulfillment of their undergraduate degree requirements.

The entire program for a general MBA is 45 credit hours for non-business majors. Courses will be available online and on main campus except for the pre-core, which is only offered online. Those students required to complete the pre-core must complete all pre-core requirements before being allowed to progress to any core courses.

Students must satisfactorily complete:

**MBA Pre-Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA 600</td>
<td>Introduction to Statistics</td>
<td>1</td>
</tr>
<tr>
<td>MBA 601</td>
<td>Introduction to Managerial Economics</td>
<td>1</td>
</tr>
<tr>
<td>MBA 602</td>
<td>Introduction to Finance</td>
<td>1</td>
</tr>
<tr>
<td>MBA 603</td>
<td>Introduction to Accounting</td>
<td>1</td>
</tr>
</tbody>
</table>

**MBA Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 609</td>
<td>Managerial Accounting</td>
<td>2</td>
</tr>
<tr>
<td>ACCT 611</td>
<td>Financial Accounting</td>
<td>2</td>
</tr>
<tr>
<td>BNAL 606</td>
<td>Statistics for Managers</td>
<td>2</td>
</tr>
<tr>
<td>BNAL 610</td>
<td>Fundamentals of Business Analytics</td>
<td>2</td>
</tr>
<tr>
<td>ECON 607</td>
<td>Managerial Economics</td>
<td>2</td>
</tr>
<tr>
<td>ECON 618</td>
<td>Global Macroeconomics</td>
<td>2</td>
</tr>
<tr>
<td>FIN 613</td>
<td>Financial Management</td>
<td>2</td>
</tr>
<tr>
<td>FIN 616</td>
<td>Investments and Portfolio Management</td>
<td>2</td>
</tr>
<tr>
<td>FIN 619</td>
<td>Business Law and Ethics</td>
<td>2</td>
</tr>
<tr>
<td>INBU 620</td>
<td>International Business Issues</td>
<td>2</td>
</tr>
<tr>
<td>IT 614</td>
<td>Information and Knowledge Management</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 605</td>
<td>Leadership Dynamics</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 612</td>
<td>Managing in Contemporary Organizations</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 621</td>
<td>Strategic Management</td>
<td>4</td>
</tr>
<tr>
<td>MKTG 608</td>
<td>Fundamentals of Contemporary Marketing</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 617</td>
<td>Marketing Strategy</td>
<td>2</td>
</tr>
<tr>
<td>OPMT 615</td>
<td>Operations &amp; Supply Chain Management</td>
<td>2</td>
</tr>
</tbody>
</table>

**Elective Credit Hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA 604</td>
<td>Introduction to Information Management</td>
<td>1</td>
</tr>
</tbody>
</table>

* Each core course is offered once per academic year in a specific semester both online and on-campus to maximize opportunity for degree completion, subject to sufficient demand.

**Graduate Writing Proficiency**

Students in the MBA program are required to meet the Old Dominion University writing requirement. This can be achieved in one of two ways: (1) earn a raw score of 4.5 or above on the Analytical Writing portion of the GMAT/GRE or (2) successfully complete MBA 621: Effective Business Writing.

**Continuance Policy**

To remain in good academic standing after admission to the program, students must maintain a minimum cumulative grade point average of 3.0 in all graduate coursework attempted at the University. Students who fall below this minimum standard will have 12 credit hours to remedy this deficiency.

Further, students may be removed from the program when they earn (1) a grade of C or lower in two courses in the pre-core, or (2) a grade of C or lower in two courses in the core and elective coursework, or (3) a failing grade (F) in any course.

**B.S. to M.P.A. (Master of Public Administration) Linked Program**

The linked B.S. to M.P.A. program provides qualified Old Dominion University undergraduate students with the opportunity to earn a master's degree in public administration while taking credits in the M.P.A. program as an undergraduate student. The program is designed for highly motivated students with the desire to immediately continue their education after the bachelor's degree. The program is especially relevant to individuals seeking to work (or currently working) in the public or non-profit sectors, but is suitable for students from any undergraduate major. Graduate courses may be taken during the fall and spring semester of the student's senior undergraduate year. Up to 12 graduate credits can count toward both the undergraduate and graduate degree and can meet upper-level General Education requirements. After receiving the undergraduate degree, a student will continue with the M.P.A. program, taking M.P.A. courses until completing the required 39 credit hours. Students in the linked program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree).
Admission Requirements
A potential candidate will have:
1. Completed all lower level general education requirements
2. Achieved a cumulative GPA of at least 3.0 at the end of the junior year
Requirements for admission to the graduate program can be found in the School of Public Service section of the Graduate Catalog. For additional information, please contact the School of Public Service in the Strome College of Business.

Research and Service Centers
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.

Center for Quantitative Fisheries Ecology
The Center for Quantitative Fisheries Ecology conducts research on the population dynamics of many marine species that are important to fisheries and conservation. The main areas of study include otolith chemistry, survey design, ageing methods, nursery habitats, and analysis techniques. To enhance the understanding of population dynamics, research focuses on utilization, evaluation, and innovation of quantitative methodologies with which fisheries scientists obtain vital rates and distribution data. To provide fisheries managers with information that they use to manage fish stock, the center also conducts stock assessments.

Biological Sciences
Christopher Osgood, 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 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. Students seeking careers in medicine, dentistry, osteopathy, optometry or podiatry should check the College of Sciences section of the catalog for additional information. Students should confer with their advisors to select the most appropriate math courses and 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.

Bachelor of Science—Biology Major

Lower-Division General Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C</td>
<td>English Composition (required)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 231C</td>
<td>Introduction to Technical Writing (required)</td>
<td>3</td>
</tr>
</tbody>
</table>

Oral Communication

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 101R</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 103R</td>
<td>Voice and Diction</td>
<td></td>
</tr>
<tr>
<td>or COMM 112R</td>
<td>Introduction to Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>or DANC/</td>
<td>Acting One</td>
<td></td>
</tr>
<tr>
<td>THEA 152R</td>
<td></td>
<td></td>
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</tbody>
</table>

Mathematics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 162M</td>
<td>Precalculus I (required)</td>
<td>3</td>
</tr>
</tbody>
</table>

Language and Culture

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 121G</td>
<td>Introduction to Information Literacy and Research for Scientists</td>
<td>3</td>
</tr>
<tr>
<td>or STEM 251G</td>
<td>Computer Literacy: Communication and Information</td>
<td></td>
</tr>
</tbody>
</table>

Information Literacy & Research

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 201C</td>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>HUM 202C</td>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>LIT 101C</td>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>PHI 201C</td>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

The Nature of Science (select one of the following)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 111N</td>
<td>Introductory General Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 112N</td>
<td>Introductory General Physics</td>
<td>3</td>
</tr>
<tr>
<td>OEA 110N</td>
<td>Earth Science</td>
<td>3</td>
</tr>
<tr>
<td>OEA 112N</td>
<td>Historical Geology</td>
<td>3</td>
</tr>
<tr>
<td>OEA 111N</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>OEA 112N</td>
<td>Historical Geology</td>
<td>3</td>
</tr>
</tbody>
</table>

Impact of Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 201C</td>
<td>Human Creativity</td>
<td>3</td>
</tr>
</tbody>
</table>

Human Behavior

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 121N</td>
<td>General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 122N</td>
<td>and General Biology I Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL 123N</td>
<td>General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 124N</td>
<td>and General Biology II Lab</td>
<td></td>
</tr>
</tbody>
</table>

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 and BIOL 123N / BIOL 124N, students must complete the following core courses, some of which are prerequisites ** or corequisites *** for upper-level biology courses (see course descriptions for prerequisites to individual courses). Core courses [BIOL 291, BIOL 292, BIOL 293, BIOL 303] 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

** 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.
+ Have (Precalculus) and (Organic Chemistry) as pre- or corequisites.

In addition to the core courses, all majors must complete at least one writing intensive (W) course and earn a grade of C or better: BIOL 401W.
BIOL 405W, BIOL 415W, BIOL 423W, BIOL 430W, BIOL 436W, BIOL 471W, BIOL 481W, or BIOL 488W.

**Biology Electives.** Students must choose at least 16 elective hours at the 300-level or above from the courses offered by the Department of Biological Sciences. Some non-laboratory course options include BIOL 302, BIOL 311, BIOL 331, BIOL 346, BIOL 355, BIOL 403, BIOL 416, BIOL 445, BIOL 446, and BIOL 494.

A minimum of three of the courses must have a structured laboratory/field component. Some examples of these courses include BIOL 401W, BIOL 404, BIOL 415W, BIOL 420, BIOL 422, BIOL 424, BIOL 426, BIOL 441, BIOL 461, and BIOL 481W.

To be clear, BIOL 368 (Internship) and BIOL 369 (Practicum) courses cannot be used to satisfy this requirement. Additionally, transfer courses will not meet the laboratory/field component unless approved by the Biology curriculum committee. Transfer courses should be submitted to the College of Sciences Advising Office for consideration.

Students may use the four credits of BIOL 241 or BIOL 251 taken at Old Dominion University towards the upper-division elective requirements. However, no 200-level transfer credits can be used towards the elective courses.

Students 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).

A Biology writing intensive course is required and must be completed with a grade of C or better. All writing intensive courses are marked with a ‘W’ at the end of the course number. This course should be taken during the junior or senior year after completion of the required prerequisites.

**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 367 (Cooperative Education), BIOL 368 (Internship), BIOL 369 (Practicum), BIOL 497 (Undergraduate Research) and BIOL 498 (Independent Study). BIOL 367, BIOL 368, BIOL 369 and BIOL 498 cannot be used to satisfy the lab/field component but can be used to satisfy one of the required 16 elective hours. See individual course descriptions and the chief departmental advisor for more information about these opportunities.

Non-biology degree requirements:

- **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
- **CHEM 211** Organic Chemistry I Lecture 3
- **CHEM elective-5 credits of CHEM elective at the 200-level or higher (excluding CHEM 343T)** 5
- **MATH 205** Calculus for Life Sciences 3
- **or MATH 200** Calculus for Business and Economics
- **or MATH 211** Calculus I
- **STAT 130M** Elementary Statistics* 3

Total Hours 22

* Prerequisite for BIOL 303.

**Elective Credit**

Elective credit will be needed to meet the minimum requirement of 120 credit hours for the degree.

**Upper-Division General Education Requirements**

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 (300-level or above) courses from outside the College of Sciences and not required by the major (6 hours)

**Requirements for Graduation**

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 ENGL 221C or ENGL 231C, and a writing intensive (W) course in the major with a grade of C or better, completion of the Senior Assessment, and completion of the Biology Department Senior Assessment when offered.

**Four-Year Plan - Biology - BS**

(http://catalog.odu.edu/undergraduate/collegeofsciences/biologicalsciences/biology-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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 completion of the general biology foundation courses (BIOL 121N, BIOL 122N and BIOL 123N, BIOL 124N), or equivalent, with a grade of C (2.0) or better. In addition, at least 15 semester credit hours in approved marine biology related courses (See Marine Biology Concentration Curriculum sheet) at the 300 or 400 level are necessary, with Marine Biology (BIOL 331) and Oceanography (OEAS 306) being required courses. BIOL 331 will satisfy 3 credits toward the required 16 credits of the biology electives; the remaining 13 credit hours needed to satisfy the biology elective requirements should be taken from approved marine biology elective courses. All required and elective courses used for the concentration must be passed with a C (2.0) or better. The mathematics requirement for the concentration is MATH 211 Calculus I or MATH 205 Calculus for Life Sciences, 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 Student 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-
Evolution
Organic Chemistry I Laboratory
Genetics
Biology Seminar

must meet the required criteria for admission by passing the Virginia Board of Education admission assessment. To review more information on the prescribed Virginia Board of Education Prescribed Assessments, visit the Office of Clinical Experiences website, http://www.odu.edu/oece and review the Professional 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 Clinical Experiences.

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 Subject Assessment, Biology content knowledge (formerly Praxis II) 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.

Background Clearance Requirement
Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

Virginia Board of Education Prescribed Assessments for Licensure
Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.

Praxis Subject Assessment, Biology content knowledge: (test code: 5235) – passing score of 155 is required

To review more information on the Virginia Board of Education prescribed assessments visit the Office of Clinical Experiences website, www.odu.edu/oece.
**Graduation**

Requirements for graduation include 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, 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 grade of C (2.0) or better 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**

<table>
<thead>
<tr>
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<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Apprentice Teaching</td>
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</tr>
<tr>
<td>BIOL 468W</td>
<td>Research Methods in Mathematics and Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**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 Office of Clinical Experiences website at: www.odu.edu/oce.

**Four-Year Plan - Biology Major Secondary Education Concentration - BS**

(http://catalog.odu.edu/undergraduate/collegeofsciences/biologicalsciences/biology-secondaryed-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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.

**Conservation Leadership Interdisciplinary Minor**

Tatyana Lobova, Department of Biological Sciences, Coordinator (tlobova@odu.edu)

The interdisciplinary minor in Conservation Leadership is offered by Old Dominion University in collaboration with the U.S. Fish and Wildlife Service (USFWS) as part of a long-term, sustainable program of conservation-related service-learning, internships and leadership programs. The minor will facilitate the development of the next generation of professionals who can address conservation issues and challenges posed by a changing climate and sea level rise. A unique aspect of this interdisciplinary minor is the requirement to take one course that is designated as a service-learning (SL) course in which the student will work at a USFWS (or related) facility.

The interdisciplinary minor in Conservation Leadership requires 15 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. There are two required, core courses and a required internship; a service-learning component is also required and is satisfied by IDS 467/BIOL 467/OEAS 467. The remaining six elective credits must be chosen from different disciplines. 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. Course substitutions may be approved by the interdisciplinary minor coordinator.

Course requirements and options are as follows.

**IDS/BIOL/OEAS 466W**

Introduction to Mitigation and Adaptation Studies 3

**IDS/BIOL/OEAS 467**

Sustainability Leadership 3

**IDS 368**

Internship in Interdisciplinary Studies 3

**Select two (6 credits of which 3 credits must be a Service-Learning (SL) course)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIOL 311</td>
<td>Global Change Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 334</td>
<td>Field Ethnobotany</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 404</td>
<td>Conservation Biology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 339T</td>
<td>The Chemistry of the Environment</td>
<td>3</td>
</tr>
<tr>
<td>CHP 328</td>
<td>Public Health Science</td>
<td>3</td>
</tr>
<tr>
<td>COMM 400W</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 301</td>
<td>Principles of Environmental Health Science</td>
<td>3</td>
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<tr>
<td>GEOG 305</td>
<td>World Resources</td>
<td>3</td>
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<tr>
<td>GEOG 306T</td>
<td>Hazards: Natural and Technological</td>
<td>3</td>
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<tr>
<td>GEOG 400W</td>
<td>Seminar in Geography (Weather, Climate and Society)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 402</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 419</td>
<td>Spatial Analysis of Coastal Environments</td>
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</tr>
<tr>
<td>GEOG 496</td>
<td>Topics in Geography</td>
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<tr>
<td>HLSC 405</td>
<td>Interprofessional Study Abroad on Global Health (SL)</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 310</td>
<td>Global Earth Systems</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 444</td>
<td>Communicating Ocean Science to Informal Audiences</td>
<td>3</td>
</tr>
<tr>
<td>PAS 300</td>
<td>Foundations of Public Service</td>
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</tr>
<tr>
<td>PAS 301</td>
<td>Ethics, Governance and Accountability in Public Service (SL)</td>
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</tr>
<tr>
<td>PAS 409</td>
<td>Leadership and Cultural Competence</td>
<td>3</td>
</tr>
<tr>
<td>PAS 411</td>
<td>Multi-Sector Partnerships for Public Service</td>
<td>3</td>
</tr>
<tr>
<td>POLS 335</td>
<td>Environmental Politics</td>
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<tr>
<td>POLS 401</td>
<td>Global Environmental Policy</td>
<td>3</td>
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<tr>
<td>POLS 455</td>
<td>The Politics of Climate Change</td>
<td>3</td>
</tr>
<tr>
<td>PRTS 405</td>
<td>Outdoor Recreation (SL)</td>
<td>3</td>
</tr>
</tbody>
</table>
Chemistry and Biochemistry

Web Site: http://www.odu.edu/chemistry

John B. Cooper, 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
Mathematics 3
COMM 101R Public Speaking
MATH 163 Precalculus II (required)

Language and Culture 0-6
Information Literacy and Research (can be met by CHEM 125) 0-3
Human Creativity 3
Interpreting the Past 3
Philosophy and Ethics 3
Literature 3

The Nature of Science 8
PHYS 231N University Physics I
& PHYS 232N and University Physics
Impact of Technology 3
Human Behavior 3

Total Hours 38-47

* 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 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 or CHEM 125 Foundations of Chemistry II Laboratory 1-4
or Foundations of Chemistry II Lab with Introduction to Chemical Research

CHEM 211 Organic Chemistry I Lecture 3
CHEM 212 Organic Chemistry I Laboratory 2
CHEM 213 Organic Chemistry II Lecture 3
CHEM 214 Organic Chemistry II Laboratory 2
or CHEM 216 Advanced Organic Chemistry Laboratory

CHEM 321 & CHEM 322 Analytical Chemistry Lecture 5
and Analytical Chemistry Laboratory

CHEM 351 Inorganic Chemistry 3
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<th>Course Code</th>
<th>Course Title</th>
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<tr>
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<td>Physical Chemistry Lecture I</td>
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</tr>
<tr>
<td>CHEM 332W</td>
<td>Experimental Physical Chemistry I</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 333</td>
<td>Physical Chemistry Lecture II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 334W</td>
<td>Experimental Physical Chemistry II</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 421</td>
<td>Instrumental Analysis Lecture</td>
<td>6</td>
</tr>
<tr>
<td>&amp; CHEM 422</td>
<td>and Instrumental Analysis Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 441</td>
<td>Biochemistry Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 485</td>
<td>Chemistry and Biochemistry Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Select two CHEM Electives from the following: 6

- CHEM 415 Intermediate Organic Chemistry
- CHEM 439 Introduction to Pharmaceutical Chemistry
- CHEM 443 Intermediate Biochemistry
- CHEM 449 Environmental Chemistry
- CHEM 451 Advanced Inorganic Chemistry
- CHEM 453 Essentials of Toxicology

Select one CHEM Laboratory from the following: 2-4

- CHEM 352 Inorganic Chemistry Laboratory
- CHEM 442W Biochemistry Laboratory

Other required courses

- MATH 211 Calculus I 4
- MATH 212 Calculus II 4
- MATH 312 Calculus III 4

Total Hours 66-71

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.

**Elective Credit**

Elective credit may be needed to meet the minimum 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 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, 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 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. Additional hours may be required to meet the foreign language requirement.

**Bachelor of Science - Chemistry with Research Concentration**

Students with an interest in pursuing chemical research after graduation or in graduate school or those seeking a deeper understanding of chemical research and applications may pursue a research concentration in Chemistry. For the research concentration, students must take Senior Thesis I and II (CHEM 490 and CHEM 499) and two of the following research oriented courses: CHEM 125, CHEM 216, CHEM 497, and CHEM 498. Courses taken for the research concentration will substitute for courses in the regular curriculum; please consult the chief departmental advisor for specific information on substitutions. Additionally, all regular B.S.-Chemistry degree requirements must be met (with the exception of approved substitutions).

**Four-Year Plan - Chemistry - BS**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Linked Bachelor's/Master's Degree Programs**

The linked B.S. in chemistry and the M.S. in chemistry allows exceptional students to count up to 12 hours of graduate courses toward both a B.S. degree in chemistry and an M.S. degree in chemistry. Students in the combined program must complete Senior Thesis I and II (CHEM 490 and CHEM 499), be accepted into the chemistry master’s program, and earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Additional requirements apply, please see the Chief Departmental Advisor.

**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 Office of Clinical Experiences website at https://www.odu.edu/oce.

**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 for Admission to an Approved Teacher Education Program**

Old Dominion University students seeking admission to an approved teacher education program must have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT). For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website at https://www.odu.edu/oce and review the Professional 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 Clinical Experiences.

**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 Subject Assessment, Chemistry content knowledge (formerly Praxis II) 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.

**Background Clearance Requirement**

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/ placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

**Virginia Board of Education Prescribed Assessments for Licensure**

Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment. The Praxis Subject Assessment, Chemistry content knowledge (test code: 5245) – passing score of 153 is required.

To review more information on the Virginia Board of Education prescribed assessments visit the Office of Clinical Experiences website at https://www.odu.edu/oce.

**Graduation**

Requirements for graduation include 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, 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 130 credit hours, which must include both a minimum of 33 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 3
Mathematics 3

**Mathematics**

MATH 163 Precalculus II (required)

**Language and Culture**

Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment. The Praxis Subject Assessment, Chemistry content knowledge (test code: 5245) – passing score of 153 is required.

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The curriculum is as follows:

**Lower-Division General Education**

Written Communication * 6
Oral Communication 3
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Mathematics 3

**Mathematics**

MATH 163 Precalculus II (required)

**Language and Culture**

Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.

**Required Chemistry courses**

CHEM 121N Foundations of Chemistry I Lecture 3
CHEM 122N Foundations of Chemistry I Laboratory 1
CHEM 123N Foundations of Chemistry II Lecture 3
CHEM 124N Foundations of Chemistry II Laboratory 1-4
or CHEM 125 Foundations of Chemistry II Lab with Introduction to Chemical Research 1
CHEM 211 Organic Chemistry I Lecture 3
CHEM 212 Organic Chemistry I Laboratory 2
CHEM 213 Organic Chemistry II Lecture 3
CHEM 214 Organic Chemistry II Laboratory 2
or CHEM 216 Advanced Organic Chemistry Laboratory 2
CHEM 321 Analytical Chemistry Lecture 5
& CHEM 322 and Analytical Chemistry Laboratory 5
CHEM 351 Inorganic Chemistry 3
CHEM 331 Physical Chemistry I Lecture 3
CHEM 332W Experimental Physical Chemistry I 2
CHEM 333 Physical Chemistry Lecture II 5
& CHEM 334W and Experimental Physical Chemistry II 5
CHEM 421 Instrumental Analysis Lecture 6
& CHEM 422 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: 3
CHEM 415 Intermediate Organic Chemistry
CHEM 439 Introduction to Pharmaceutical Chemistry
CHEM 443 Intermediate Biochemistry
CHEM 451 Advanced Inorganic Chemistry
Select one CHEM Laboratory from the following: 2-4
CHEM 352 Inorganic Chemistry Laboratory
CHEM 442W Biochemistry Laboratory

**Other Required courses**

MATH 211 Calculus I 4
MATH 212 Calculus II 4
MATH 312 Calculus III 4

Total Hours 66-71

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.
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The professional education core courses and requirements

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<td>CHEM 468</td>
<td>Research Methods in Mathematics and Science</td>
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</tr>
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Total Hours: 26

Four-Year Plan - Chemistry Major with Teaching Licensure - BS (http://catalog.odu.edu/undergraduate/collegeofsciences/chemistrybiochemistry/chemistry-chemistryed-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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).

Bachelor of Science–Biochemistry Major

Lower-Division General Education

<table>
<thead>
<tr>
<th>Category</th>
<th>Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication *</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MATH 163 Precalculus II (required)</td>
<td></td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>can be met by CHEM 125</td>
<td>0-3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>BIOL 121N General Biology I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 122N General Biology I Lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 123N General Biology II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 124N General Biology II Lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact of Technology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 38-47

* 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 122N</td>
<td>Foundations of Chemistry II Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 124N</td>
<td>Foundations of Chemistry II Laboratory</td>
<td>1-4</td>
</tr>
<tr>
<td>or CHEM 125</td>
<td>Foundations of Chemistry II Lab with Introduction to Chemical Research</td>
<td></td>
</tr>
<tr>
<td>CHEM 211</td>
<td>Organic Chemistry I Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>Organic Chemistry I Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>Organic Chemistry II Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 214</td>
<td>Organic Chemistry II Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>or CHEM 216</td>
<td>Advanced Organic Chemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Analytical Chemistry Lecture</td>
<td>5</td>
</tr>
<tr>
<td>&amp; CHEM 322</td>
<td>Analytical Chemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 331</td>
<td>Physical Chemistry Lecture I</td>
<td>6</td>
</tr>
<tr>
<td>&amp; CHEM 333</td>
<td>Physical Chemistry Lecture II</td>
<td></td>
</tr>
<tr>
<td>CHEM 441</td>
<td>Biochemistry Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 442W</td>
<td>Biochemistry Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 443</td>
<td>Intermediate Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 485</td>
<td>Chemistry and Biochemistry Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Other Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 312</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
<td>8</td>
</tr>
<tr>
<td>&amp; PHYS 232N</td>
<td>University Physics II</td>
<td></td>
</tr>
<tr>
<td>BIOL 293</td>
<td>Cell Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 303</td>
<td>Genetics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours: 66-69

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.

Biochemistry majors may attain an ACS-certified degree for chemistry content if they also complete the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 332W</td>
<td>Experimental Physical Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 351</td>
<td>Inorganic Chemistry</td>
<td></td>
</tr>
</tbody>
</table>

Two of the following lecture electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 411</td>
<td>Natural Products Chemistry in the Carribean</td>
<td></td>
</tr>
<tr>
<td>CHEM 415</td>
<td>Intermediate Organic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 421</td>
<td>Instrumental Analysis Lecture</td>
<td></td>
</tr>
<tr>
<td>CHEM 449</td>
<td>Environmental Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 451</td>
<td>Advanced Inorganic Chemistry</td>
<td></td>
</tr>
</tbody>
</table>

Two of the following laboratory electives:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 334W</td>
<td>Experimental Physical Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 352</td>
<td>Inorganic Chemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 422</td>
<td>Instrumental Analysis Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

Old Dominion University
Elective Credit
Elective credit may be needed to meet the minimum 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 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, 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 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. 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.

Four-Year Plan - Biochemistry - BS
(http://catalog.odu.edu/undergraduate/collegeofsciences/chemistrybiochemistry/biochemistry-bs-fouryearplan)
This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Linked Bachelor's/Master's Degree Programs
The linked B.S. in biochemistry and the M.S. in chemistry allows exceptional students to count up to 12 hours of graduate courses toward both a B.S. degree in biochemistry and an M.S. degree in chemistry. Students in the combined program must complete Senior Thesis I and II (CHEM 490 and CHEM 499), be accepted into the chemistry master’s program, and earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). Additional requirements apply, Please see the Chief Departmental Advisor.

Bachelor of Science—Biochemistry 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 biochemistry. 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 Office of Clinical Experiences website at https://www.odu.edu/oco.

*Licensure pending approval of the Virginia Department of Education

Admission
Students must first declare the biochemistry teacher preparation track as their major with the chemistry departmental advisor. All students must apply for and be admitted into the approved biochemistry 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 for Admission to an Approved Teacher Education Program
Old Dominion University students seeking admission to an approved teacher education program must have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).
For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website at https://www.odu.edu/oco and review the Professional 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 biochemistry 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 Clinical Experiences.

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 Subject Assessment, Chemistry content knowledge (formerly Praxis II) 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.

Background Clearance Requirement
Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

Virginia Board of Education Prescribed Assessments for Licensure
Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment
Praxis Subject Assessment, Chemistry content knowledge (test code: 5245) – passing score of 153 is required
To review more information on the Virginia Board of Education prescribed assessments visit the Office of Clinical Experiences website at https://www.odu.edu/oco.
Graduation

Requirements for graduation include 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, 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 130 credit hours, which must include both a minimum of 33 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 101R Public Speaking</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 163 Precalculus II (required)</td>
<td></td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research (can be met by CHEM 125)</td>
<td>0-3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>BIOL 121N General Biology I</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOL 122N and General Biology I Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL 123N General Biology II</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOL 124N and General Biology II Lab</td>
<td></td>
</tr>
<tr>
<td>Impact of Technology</td>
<td>3</td>
</tr>
<tr>
<td>Human Behavior</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 101S Environmental Geography</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td>38-47</td>
</tr>
</tbody>
</table>

* 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 seeking teacher licensure must complete the following courses.

**Required Chemistry courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 121N Foundations of Chemistry I Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 122N Foundations of Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 123N Foundations of Chemistry II Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 124N or CHEM 125 Foundations of Chemistry II Laboratory</td>
<td>1-4</td>
</tr>
<tr>
<td>CHEM 211 Organic Chemistry I Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 212 Organic Chemistry I Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 213 Organic Chemistry II Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 214 or CHEM 216 Organic Chemistry II Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 321 or CHEM 322 Analytical Chemistry Lecture</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 331 Physical Chemistry Lecture I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 333 Physical Chemistry Lecture II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 441 Biochemistry Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 442W Biochemistry Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 443 Intermediate Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 485 Chemistry and Biochemistry Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

**Other Required courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 211 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 212 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 312 Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 293 Cell Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 303 Genetics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 231N University Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 232N University Physics II</td>
<td>4</td>
</tr>
<tr>
<td>Total Hours</td>
<td>66-69</td>
</tr>
</tbody>
</table>

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.

**The professional education core courses and requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM 101 Step 1 – Inquiry Approaches to Teaching STEM</td>
<td>1</td>
</tr>
<tr>
<td>STEM 102 Step 2 - Inquiry Based STEM Lesson Design</td>
<td>1</td>
</tr>
<tr>
<td>STEM 201 Knowing and Learning in STEM Education</td>
<td>3</td>
</tr>
<tr>
<td>STEM 202 Classroom Interactions in STEM Education</td>
<td>3</td>
</tr>
<tr>
<td>STEM 401 Project Based Instruction in STEM Education</td>
<td>3</td>
</tr>
<tr>
<td>STEM 402 Perspectives on STEM</td>
<td>3</td>
</tr>
<tr>
<td>STEM 485 Apprentice Teaching</td>
<td>9</td>
</tr>
<tr>
<td>CHEM 468 Research Methods in Mathematics and Science</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>26</td>
</tr>
</tbody>
</table>

**Four-Year Plan - Biochemistry Major with Teaching Licensure - BS**

(http://catalog.odu.edu/undergraduate/collegeofsciences/chemistrybiochemistry/biochemistryed-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Minor in Chemistry**

The chemistry minor consists of 13 credits of which nine credits must be selected from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 213 Organic Chemistry II Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 321 Analytical Chemistry Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 331 Physical Chemistry Lecture I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 333 Physical Chemistry Lecture II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 351 Inorganic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 411 Natural Products Chemistry in the Caribbean</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 415 Intermediate Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 439 Introduction to Pharmaceutical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 441 Biochemistry Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 443 Intermediate Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 449 Environmental Chemistry</td>
<td>3</td>
</tr>
</tbody>
</table>

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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 course 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 Prior Learning Assessment Credit Options at the Undergraduate Level.

**Computer Science**

Ravi Mukkamala, 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. Students can also earn a degree of Bachelor of Science in Computer Science with Teaching Licensure, which is intended for those who wish to pursue a career in teaching computer science at the high school level and leads to teaching licensure in the Commonwealth of Virginia (pending approval of the Virginia Department of Education). A linked undergraduate to graduate option is available that leads to Bachelor of Science in Computer Science and Master of Business Administration degrees. The CS department supports the computer technology concentration of the Engineering Technology bachelor's degree and the Modeling and Simulation Engineering bachelor's degree. The CS department also supports the Bachelor of Science degree in Cybersecurity.

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 cybersecurity.

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**

<table>
<thead>
<tr>
<th>Skills</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication *</td>
<td>6</td>
</tr>
<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
</tr>
<tr>
<td>&amp; ENGL 231C</td>
<td>and Introduction to Technical Writing (preferred)</td>
</tr>
<tr>
<td>Mathematical Skills (satisfied in the major)</td>
<td></td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 101R</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>CS 121G</td>
<td>Introduction to Information Literacy and Research for Scientists</td>
</tr>
<tr>
<td>Language and Culture (competence must be at the 102 level)</td>
<td>0-6</td>
</tr>
</tbody>
</table>

**Ways of Knowing**

| Human Creativity | 3 |
| Literature | 3 |
| The Nature of Science ** | 8 |
| Human Behavior | 3 |
| Interpreting the Past | 3 |
| Philosophy and Ethics | 3 |

<table>
<thead>
<tr>
<th>Impact of Technology (satisfied in the major by CS 300T)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Hours</td>
<td>35-41</td>
</tr>
</tbody>
</table>

* Grade of C or better required in both courses
** Computer Science majors must complete two Nature of Science courses in sequence for a total of eight credits from the following:

| BIOL 121N | General Biology I |
| & BIOL 122N | and General Biology I Lab |
Required Computer Science Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 150</td>
<td>Problem Solving and Programming I</td>
<td>4</td>
</tr>
<tr>
<td>CS 170</td>
<td>Introduction to Computer Architecture I</td>
<td>3</td>
</tr>
<tr>
<td>CS 250</td>
<td>Problem Solving and Programming II</td>
<td>4</td>
</tr>
<tr>
<td>CS 252</td>
<td>Introduction to Unix for Programmers</td>
<td>1</td>
</tr>
<tr>
<td>CS 270</td>
<td>Introduction to Computer Architecture II</td>
<td>3</td>
</tr>
<tr>
<td>CS 300T</td>
<td>Computers in Society</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Object-Oriented Programming and Design</td>
<td>3</td>
</tr>
<tr>
<td>CS 350</td>
<td>Introduction to Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CS 355</td>
<td>Principles of Programming Languages</td>
<td>3</td>
</tr>
<tr>
<td>CS 361</td>
<td>Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 381</td>
<td>Introduction to Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 390</td>
<td>Introduction to Theoretical Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CS 410</td>
<td>Professional Workforce Development I</td>
<td>3</td>
</tr>
<tr>
<td>CS 411W</td>
<td>Professional Workforce Development II</td>
<td>3</td>
</tr>
<tr>
<td>CS 417</td>
<td>Computational Methods and Software</td>
<td>3</td>
</tr>
<tr>
<td>CS 471</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>48</td>
</tr>
</tbody>
</table>

Elective Computer Science Courses

Three additional CS courses (9 credits) at the 300/400 level (excluding CS 334 and CS 382).

Computer science majors may select their own electives from the CS offerings. Up to six credits of work experience (CS 367 or CS 368) may be used.

Select three courses from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 312</td>
<td>Internet Concepts</td>
</tr>
<tr>
<td>CS 402</td>
<td>Formal Software Foundations</td>
</tr>
<tr>
<td>CS 418</td>
<td>Web Programming</td>
</tr>
<tr>
<td>CS 431</td>
<td>Web Server Design</td>
</tr>
<tr>
<td>CS 432</td>
<td>Web Science</td>
</tr>
<tr>
<td>CS 441</td>
<td>App Development for Smart Devices</td>
</tr>
<tr>
<td>CS 450</td>
<td>Database Concepts</td>
</tr>
<tr>
<td>CS 451</td>
<td>Software Engineering Survey</td>
</tr>
<tr>
<td>CS 454</td>
<td>Network Management</td>
</tr>
<tr>
<td>CS 455</td>
<td>Introduction to Networks and Communications</td>
</tr>
<tr>
<td>CS 458</td>
<td>Unix System Administration</td>
</tr>
<tr>
<td>CS 460</td>
<td>Computer Graphics</td>
</tr>
<tr>
<td>CS 462</td>
<td>Cybersecurity Fundamentals</td>
</tr>
<tr>
<td>CS 463</td>
<td>Cryptography for Cybersecurity</td>
</tr>
<tr>
<td>CS 464</td>
<td>Networked Systems Security</td>
</tr>
<tr>
<td>CS 465</td>
<td>Information Assurance</td>
</tr>
<tr>
<td>CS 467</td>
<td>Introduction to Reverse Software Engineering</td>
</tr>
<tr>
<td>CS 472</td>
<td>Network and Systems Security</td>
</tr>
<tr>
<td>CS 475</td>
<td>Introduction to Computer Simulation</td>
</tr>
<tr>
<td>CS 476</td>
<td>Systems Programming</td>
</tr>
<tr>
<td>CS 478</td>
<td>Computational Geometry, Methods and Applications</td>
</tr>
<tr>
<td>CS 480</td>
<td>Introduction to Artificial Intelligence</td>
</tr>
<tr>
<td>CS 486</td>
<td>Introduction to Parallel Computing</td>
</tr>
<tr>
<td>CS 487</td>
<td>Applied Parallel Computing</td>
</tr>
<tr>
<td>CS 488</td>
<td>Principles of Compiler Construction</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
</tr>
</tbody>
</table>

Other Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 316</td>
<td>Introductory Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>STAT 330</td>
<td>An Introduction to Probability and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Technical Electives *</td>
<td></td>
<td>6-8</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>20-22</td>
</tr>
</tbody>
</table>

* 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, PHYS 101N, PHYS 102N PHYS 103N-PHYS 104N, and all courses that end in a “T”). 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

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 ENGL 221C or ENGL 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.

Four-Year Plan - Computer Science - BSCS (http://catalog.odu.edu/undergraduate/collegeofsciences/computerscience/computersc-bscs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Bachelor of Science in Computer Science 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 in Computer Science. 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 Office of Clinical Experiences website at https://www.odu.edu/orce.

*Licensure pending approval of the Virginia Department of Education

Admission

Students must first declare the computer science teacher preparation track as their major with the computer science departmental advisor. All students must apply for and be admitted into the approved computer 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).

Virginia Board of Education Prescribed Assessments for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website at https://www.odu.edu/orce and review the Professional 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 computer science courses must be passed with a grade of C (2.0) or above and all other 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 computer 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 Clinical Experiences in the Darden College of Education and Professional Studies.

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. Computer science 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 Subject Assessment, Computer Science content knowledge (formerly Praxis II) 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.

Background Clearance Requirement

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

Virginia Board of Education Prescribed Assessments for Licensure

Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment

Praxis Subject Assessment, Computer Science content knowledge (test code: 5652) - passing score of 142 is required

To review more information on the Virginia Board of Education prescribed assessments visit the Office of Clinical Experiences website at https://www.odu.edu/orce.

Graduation

Requirements for graduation include 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, 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 computer science 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.

Lower-Division General Education

Skills

Written Communication 6
**Required Computer Science Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 150</td>
<td>Problem Solving and Programming I</td>
<td>4</td>
</tr>
<tr>
<td>CS 170</td>
<td>Introduction to Computer Architecture I</td>
<td>3</td>
</tr>
<tr>
<td>CS 250</td>
<td>Problem Solving and Programming II</td>
<td>4</td>
</tr>
<tr>
<td>CS 252</td>
<td>Introduction to Unix for Programmers</td>
<td>1</td>
</tr>
<tr>
<td>CS 270</td>
<td>Introduction to Computer Architecture II</td>
<td>3</td>
</tr>
<tr>
<td>CS 300T</td>
<td>Computers in Society</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 330</td>
<td>Object-Oriented Programming and Design</td>
<td>3</td>
</tr>
<tr>
<td>CS 350</td>
<td>Introduction to Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CS 355</td>
<td>Principles of Programming Languages</td>
<td>3</td>
</tr>
<tr>
<td>CS 361</td>
<td>Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 381</td>
<td>Introduction to Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 432</td>
<td>Web Science</td>
<td>3</td>
</tr>
<tr>
<td>CS 462</td>
<td>Cybersecurity Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>CS 471</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

**Other Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 316</td>
<td>Introductory Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>STAT 330</td>
<td>An Introduction to Probability and Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours**

- 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.
- Computer science majors must be at the 102 level.
- Computer Science majors must complete two Nature of Science courses in sequence for a total of eight credits from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 121N</td>
<td>General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 122N</td>
<td>General Biology I Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL 123N</td>
<td>General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 124N</td>
<td>General Biology II Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL 136N</td>
<td>Honors General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 137N</td>
<td>Honors General Biology I Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL 138N</td>
<td>Honors General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 139N</td>
<td>Honors General Biology II Lab</td>
<td></td>
</tr>
<tr>
<td>CHEM 105N</td>
<td>Introductory Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 106N</td>
<td>Introductory Chemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 107N</td>
<td>Introductory Organic and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 108N</td>
<td>Introductory Organic and Biochemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 122N</td>
<td>Foundations of Chemistry I Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 124N</td>
<td>Foundations of Chemistry II Laboratory</td>
<td></td>
</tr>
<tr>
<td>OEAS 106N</td>
<td>Introductory Oceanography</td>
<td>8</td>
</tr>
<tr>
<td>&amp; OEAS 108N</td>
<td>Understanding Global Climate Change</td>
<td></td>
</tr>
<tr>
<td>OEAS 106N</td>
<td>Introductory Oceanography</td>
<td>8</td>
</tr>
<tr>
<td>&amp; OEAS 250N</td>
<td>Natural Hazards and Disasters</td>
<td></td>
</tr>
<tr>
<td>OEAS 110N</td>
<td>Earth Science</td>
<td>4</td>
</tr>
<tr>
<td>or OEAS 111N</td>
<td>Physical Geology</td>
<td></td>
</tr>
<tr>
<td>&amp; OEAS 112N</td>
<td>Historical Geology</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 111N</td>
<td>Introductory General Physics</td>
<td>8</td>
</tr>
<tr>
<td>&amp; PHYS 112N</td>
<td>Introductory General Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
<td>8</td>
</tr>
<tr>
<td>&amp; PHYS 232N</td>
<td>University Physics</td>
<td></td>
</tr>
</tbody>
</table>

**Total Hours**

- Computer science majors must complete two Nature of Science courses in sequence for a total of eight credits from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 121N</td>
<td>General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 122N</td>
<td>General Biology I Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL 123N</td>
<td>General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 124N</td>
<td>General Biology II Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL 136N</td>
<td>Honors General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 137N</td>
<td>Honors General Biology I Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL 138N</td>
<td>Honors General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 139N</td>
<td>Honors General Biology II Lab</td>
<td></td>
</tr>
<tr>
<td>CHEM 105N</td>
<td>Introductory Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 106N</td>
<td>Introductory Chemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 107N</td>
<td>Introductory Organic and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 108N</td>
<td>Introductory Organic and Biochemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
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<tr>
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<td>CHEM 123N</td>
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<tr>
<td>&amp; CHEM 124N</td>
<td>Foundations of Chemistry II Laboratory</td>
<td></td>
</tr>
<tr>
<td>OEAS 106N</td>
<td>Introductory Oceanography</td>
<td>8</td>
</tr>
<tr>
<td>&amp; OEAS 108N</td>
<td>Understanding Global Climate Change</td>
<td></td>
</tr>
<tr>
<td>OEAS 106N</td>
<td>Introductory Oceanography</td>
<td>8</td>
</tr>
<tr>
<td>&amp; OEAS 250N</td>
<td>Natural Hazards and Disasters</td>
<td></td>
</tr>
<tr>
<td>OEAS 110N</td>
<td>Earth Science</td>
<td>4</td>
</tr>
<tr>
<td>or OEAS 111N</td>
<td>Physical Geology</td>
<td></td>
</tr>
<tr>
<td>&amp; OEAS 112N</td>
<td>Historical Geology</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 111N</td>
<td>Introductory General Physics</td>
<td>8</td>
</tr>
<tr>
<td>&amp; PHYS 112N</td>
<td>Introductory General Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
<td>8</td>
</tr>
<tr>
<td>&amp; PHYS 232N</td>
<td>University Physics</td>
<td></td>
</tr>
</tbody>
</table>

**Four-Year Plan - Computer Science Teaching Licensure - BSCS**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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.

Qualified undergraduate computer science majors have the opportunity to participate in the Honors Program in computer science (coordinator: Dr. Jing He). Students who complete the program and also meet the University's standards for graduation with honors (see the section on Graduation with Honors in this Catalog) may earn the designation of departmental honors on their diplomas. Contact the Coordinator, Dr. Jing He for application and program information.
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 Career Development Services prior to registering for Cooperative Education credit. All work experiences must be approved by Career Development Services 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 Development Services 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 150</td>
<td>Problem Solving and Programming I</td>
<td>4</td>
</tr>
<tr>
<td>CS 250</td>
<td>Problem Solving and Programming II</td>
<td>4</td>
</tr>
<tr>
<td>CS 252</td>
<td>Introduction to Unix for Programmers</td>
<td>1</td>
</tr>
<tr>
<td>CS 361</td>
<td>Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>or CS 330</td>
<td>Object-Oriented Programming and Design</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select two CS Electives at the 400-level or from the following:</td>
<td>6</td>
</tr>
</tbody>
</table>

Minor in Web Programming

Students may minor in Web Programming by taking the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 330</td>
<td>Object-Oriented Programming and Design</td>
<td>3</td>
</tr>
<tr>
<td>CS 418</td>
<td>Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>Select two of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 312</td>
<td>Internet Concepts</td>
<td></td>
</tr>
<tr>
<td>CS 431</td>
<td>Web Server Design</td>
<td></td>
</tr>
<tr>
<td>CS 432</td>
<td>Web Science</td>
<td></td>
</tr>
<tr>
<td>CS 441</td>
<td>App Development for Smart Devices</td>
<td></td>
</tr>
<tr>
<td>CS 462</td>
<td>Cybersecurity Fundamentals</td>
<td></td>
</tr>
<tr>
<td>CS 465</td>
<td>Information Assurance</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours 12

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.

Linked 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. Linked 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.

Linked Bachelor of Science in Computer Science and Master of Science in Computer Science

This program allows for exceptionally successful students to earn both a BSCS and an MS in Computer Science by allowing up to 12 credits of graduate coursework to count toward both their bachelor’s and master’s degree in Computer Science. All options available under the MS degree are available under this program. Students must earn a minimum of 150 credit hours (120 discrete credit hours for the undergraduate degree and 30 discrete credit hours for the graduate degree).
Admission
To be admitted to the linked 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.
   b. 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.
   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 linked 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 our faculty, staff, students and guests. Assets are distributed between Dragas Hall and the Engineering and Computational Sciences Building (E&CS). This system architecture enables our 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 our primary data-center and main administrative office. It also houses several of our research labs, a multimedia conference room, and our network operations center. Dragas Hall contains several instructional and research labs, our 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 our Virtual Computing Lab (VCLab) where users can have access to our software remotely, roaming profiles, MSSQL database access for research, and Hyper-V virtualization for research/faculty projects. For Unix and Linux users we support Solaris, Ubuntu and Red Hat Enterprise Linux (RHEL) distributions. Our *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
Web Site: http://www.odu.edu/math
Hideaki Kaneko, Chair
R. Stroozak, Chief Departmental Advisor

Bachelor of Science in Mathematics
The Department of Mathematics and Statistics offers programs of study that lead to the degree of Bachelor of Science in Mathematics. A student can earn the degree by completing a major in Applied Mathematics, a major in Statistics/Biostatistics, a major in Actuarial Mathematics, or a major in Big Data Analytics. Students can also earn a degree of Bachelor of Science in Mathematics with Teaching Licensure, which 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 major is intended for students wishing to pursue graduate work in mathematics or otherwise obtain employment in a mathematics field. Similarly, the statistics/biostatistics major is intended for those who wish to pursue graduate work in statistics or otherwise obtain employment in a statistics-related field, especially biostatistics. The actuarial mathematics major is specifically designed for students who wish to pursue an actuarial field, pursue graduate work in financial mathematics, or employment in a mathematics or statistics-related field. The big data analytics major is designed for students wishing to pursue one of the many jobs that require solving important large-scale problems in applied science, engineering, business, industry and government as well as pursue graduate work in big data analytics. Teaching licensure can also be added to any of the majors above, which automatically fulfills the University’s upper-division general education requirement under Option A except for a double major in applied mathematics and statistics/biostatistics. The requirements of each major along with the professional education courses needed for teacher licensure in the Commonwealth of Virginia are listed below. All students earning a Bachelor of Science in Mathematics have to successfully complete the mathematics core course requirements.
## Requirements

### Lower-Division General Education

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (met in the major by MATH 211)</td>
<td></td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>CS 121G Introduction to Information Literacy and Research for Scientists (preferred) **</td>
<td></td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Human Behavior ***</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics (PHIL 120P recommended)</td>
<td></td>
</tr>
<tr>
<td>The Nature of Science *</td>
<td>8</td>
</tr>
<tr>
<td>Impact of Technology **</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>38-44</td>
</tr>
</tbody>
</table>

* A grade of C or better is required in both courses.

** IT 150G is an acceptable substitute for the Actuarial Mathematics major or the Big Data Analytics major.

*** ECON 202S is required for the Actuarial Mathematics major.

+ 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 major; 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 major.

++ IT 360T suggested for the Actuarial Mathematics major.

### Other Required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 150 Problem Solving and Programming I</td>
<td>4</td>
</tr>
</tbody>
</table>

### Mathematics Core Course Requirements *

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 211 Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 212 Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 307 Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 311W Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 312 Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH 316 Introductory Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 317 Calculus IV; Introductory Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 310 Introductory Data Analysis **</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 431 Theory of Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 330 An Introduction to Probability and Statistics ***</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 331 Theory of Probability</td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>34</td>
</tr>
</tbody>
</table>

* A grade of C+ or higher is required in MATH 211 and MATH 212. A cumulative GPA of 2.3 or higher is required in all 300 and 400 level core courses with no grade lower than a C. 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 and Actuarial Mathematics majors must take both.

*** Statistics/Biostatistics majors and Actuarial Mathematics majors take STAT 331.

All students earning a B.S. in Mathematics are required to choose one of the following majors or complete the teaching licensure requirements.

### Major in Applied Mathematics

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 401 Partial Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 408 Applied Numerical Methods I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 422 Applied Complex Variables</td>
<td>3</td>
</tr>
<tr>
<td>MATH 400-level electives (or approved BDA courses):</td>
<td>9</td>
</tr>
<tr>
<td>No more than One of the following may be selected:</td>
<td></td>
</tr>
<tr>
<td>MATH 400 History of Mathematics</td>
<td></td>
</tr>
<tr>
<td>MATH 404 Fundamental Concepts of Geometry</td>
<td></td>
</tr>
<tr>
<td>MATH 406 Number Theory and Discrete Mathematics</td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

### Major in Statistics/Biostatistics

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 310 Introductory Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 431 Theory of Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 405 Introduction to Data Handling</td>
<td>3</td>
</tr>
<tr>
<td>STAT 400-level electives (or approved BDA courses)</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

### Major in Actuarial Mathematics

The upper-division general education requirement must be satisfied by completing a Finance major with Risk Management and Insurance concentration (Option A) or by completing a Finance minor in Risk Management and Insurance (Option B).

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 310 Introductory Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 431 Theory of Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 405 Introduction to Data Handling</td>
<td>3</td>
</tr>
<tr>
<td>STAT 437 Applied Regression and Time Series Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 408 Applied Numerical Methods I</td>
<td>3</td>
</tr>
<tr>
<td>Two courses from the following list with at least one being a STAT course</td>
<td>6</td>
</tr>
<tr>
<td>MATH 401 Partial Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 409 Applied Numerical Methods II</td>
<td></td>
</tr>
<tr>
<td>MATH 417 Intermediate Real Analysis I</td>
<td></td>
</tr>
<tr>
<td>STAT 432 Sampling Theory</td>
<td></td>
</tr>
<tr>
<td>STAT 449 Nonparametric Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 450 Categorical Data Analysis</td>
<td></td>
</tr>
<tr>
<td>STAT 460 Statistical Simulation/Programming Using Statistical Software Packages</td>
<td></td>
</tr>
<tr>
<td>or approved BDA courses</td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

### Major in Big Data Analytics

The upper-division general education requirement must be satisfied by completing a minor or second major in computer science, which includes CS 361 Advanced Data Structures and Algorithms.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 405 Introduction to Data Handling</td>
<td>3</td>
</tr>
<tr>
<td>BDA 411 Introduction to Machine Learning I</td>
<td>3</td>
</tr>
<tr>
<td>BDA 431 Modern Statistical Methods for Big Data Analytics</td>
<td>3</td>
</tr>
<tr>
<td>BDA 432 Introduction to Optimization and Inverse Problems</td>
<td>3</td>
</tr>
<tr>
<td>BDA 450 Senior Project in Big Data Analytics I</td>
<td>3</td>
</tr>
<tr>
<td>At least three of the following courses</td>
<td>9</td>
</tr>
<tr>
<td>STAT 431 Theory of Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT 437 Applied Regression and Time Series Analysis</td>
<td></td>
</tr>
<tr>
<td>MATH 401 Partial Differential Equations</td>
<td></td>
</tr>
</tbody>
</table>

---

305 Mathematics and Statistics
ELECTIVE CREDIT

ELECTIVE CREDIT may be needed to meet the minimum requirement of 120 credit hours for all students earning a B.S. in Mathematics.

FOUR-YEAR PLAN - MATHEMATICS MAJOR - BS (http://catalog.odu.edu/undergraduate/collegeofsciences/mathematicsstatistics/mathematics-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

BACHELOR OF SCIENCE IN MATHEMATICS WITH 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 Office of Clinical Experiences website at www.odu.edu/uce.

ADMISSION

Students must first declare mathematics with teaching licensure as their program 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 FOR ADMISSION TO AN APPROVED TEACHER EDUCATION PROGRAM

Old Dominion University students seeking admission to an approved teacher education program must have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, http://www.odu.edu/uce and review the Professional Education Handbook.

REQUIRED GRADE POINT AVERAGES (GPA)

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required. The mathematics core must be successfully completed. A grade of C+ or higher is required in MATH 211 and MATH 212, and a cumulative GPA of 2.3 or higher is required in all 300 and 400 level core courses with no grade lower than a C. 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 MonarchTeach Office.

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. The mathematics core must be successfully completed. A grade of C+ or higher is required in MATH 211 and MATH 212, and a cumulative GPA of 2.3 or higher is required in all 300 and 400 level mathematics core courses with no grade lower than a C. 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 Subject Assessment, Mathematics content knowledge (formerly Praxis II) 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.

BACKGROUND CLEARANCE REQUIREMENT

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

VIRGINIA BOARD OF EDUCATION PRESCRIBED ASSESSMENTS FOR LICENSURE

Virginia Board of Education Prescribed Assessments for Licensure

Virginia Communication and Literacy Assessment (VCLA) - a passing composite score of 470 is required on this reading and writing assessment

Praxis Subject Assessment, Mathematics content knowledge (formerly Praxis II). Test code: 5161 – passing score of 160 is required

To review more information on the Virginia Board of Education prescribed assessments visit the Office of Clinical Experiences website, www.odu.edu/uce.

GRADUATION

Requirements for graduation with a B.S. in Mathematics with Teaching Licensure include completion of ENGL 110C and ENGL 211C or ENGL 221C or ENGL 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, successful completion of the mathematics core, 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 120 credit hours to include a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University. Successful completion of the core requires a grade of C+ or higher in MATH 211 and MATH 212, and a cumulative GPA of 2.3 or higher is required in all 300 and 400 level mathematics core courses with no grade lower than a C.

COURSE REQUIREMENTS FOR THE B.S. IN MATHEMATICS WITH TEACHING LICENSURE

MATH 375 Advanced Concepts for Secondary Educators: Function and Modeling

MATH 400 History of Mathematics

MATH 404 Fundamental Concepts of Geometry

MATH 406 Number Theory and Discrete Mathematics

MATH 417 Intermediate Real Analysis I

Old Dominion University 306
Total Hours 21

Professional Education core courses and requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM 101</td>
<td>Step 1 - Inquiry Approaches to Teaching STEM</td>
<td>1</td>
</tr>
<tr>
<td>STEM 102</td>
<td>Step 2 - Inquiry Based STEM Lesson Design</td>
<td>1</td>
</tr>
<tr>
<td>STEM 201</td>
<td>Knowing and Learning in STEM Education</td>
<td>3</td>
</tr>
<tr>
<td>STEM 202</td>
<td>Classroom Interactions in STEM Education</td>
<td>3</td>
</tr>
<tr>
<td>STEM 401</td>
<td>Project Based Instruction in STEM Education</td>
<td>3</td>
</tr>
<tr>
<td>STEM 402</td>
<td>Perspectives on STEM</td>
<td>3</td>
</tr>
<tr>
<td>STEM 485</td>
<td>Apprentice Teaching</td>
<td>9</td>
</tr>
<tr>
<td>SCI 468</td>
<td>Research Methods in Math and Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>

(Satisfied by BIOL 468W, CHEM 468, OEAS 468W, or PHYS 468W)

Total Hours 26

Upper-Division General Education

The professional education core satisfies this requirement for students earning a B.S. in Mathematics with Teaching Licensure. Students majoring in Actuarial Mathematics must complete a major or a minor in Finance with a concentration in Risk Management and Insurance to meet upper-division general education requirements. Students majoring in Big Data Analytics must complete a major or a minor in Computer Science, which includes CS 361 in order to meet upper-division general education requirements.

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department), or second degree or second major. A double major within the Department of Mathematics and Statistics will not satisfy the University’s upper-division general education requirement under option A except for a double major in applied mathematics and statistics/biostatistics.
- 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

Requirements for graduation for students majoring in applied mathematics, statistics/biostatistics, big data analytics and actuarial mathematics include a minimum cumulative grade point average of 2.00 overall and in the major with successful completion of the mathematics core, 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 and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better, and completion of the Senior Assessment.

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 majors.

Four-Year Plan - Mathematics with Teaching Licensure - BS (http://catalog.odu.edu/undergraduate/collegeofsciences/mathematicsstatistics/mathematics-mathed-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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 or BDA 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 Prior Learning Assessment Credit Options at the
Undergraduate Level sections of this Catalog. Advanced placement credit is not available for MATH 102M.

**Linked Bachelor of Science in Mathematics and Master of Science in Computational and Applied Mathematics**

The linked program allows students to count up to 12 credits of graduate coursework toward both their undergraduate and master's degrees. Students must earn a minimum of 150 credits (120 for the undergraduate degree and 30 for the graduate degree).

**Admission**

To be admitted to the linked program, students must have completed at least 60 undergraduate credit hours with at least 24 credit hours from ODU. Students must have completed MATH 307, MATH 312, MATH 317 and all prerequisites for those courses. At the time of admission, they must have an overall GPA of 3.00 or better and a GPA of 3.00 or better in MATH and STAT 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 Mathematics 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 computational and applied mathematics 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 computational and applied mathematics, 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 computational and applied mathematics, 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 B.S. in mathematics and an M.S. in computational and applied mathematics with the following exceptions:

1. Students in the program may count up to 12 hours of 500 or 600 level graduate courses, excluding independent study, taken as an undergraduate for which they have earned a grade point average of 3.0 or greater with no course grade lower than a B- toward both the B.S. in mathematics and the M.S. in computational and applied mathematics.
2. Students in the program may substitute mathematics or statistics graduate courses for undergraduate courses according to the following schema. All students must complete an undergraduate writing intensive course in the major.
   a. All students must complete the prescribed undergraduate program including all 400-level required courses and electives.
   b. All students may substitute 500- and 600-level courses for the remaining credit hours in the 120-hour requirement in the undergraduate program so long as they have the prerequisites for those courses. 700- or 800-level courses may not be used.
   c. Students will not receive credit for both the 400 and 500 level version of the same course.
   d. 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; however, only 12 hours of graduate courses taken as an undergraduate may also be counted toward the M.S. degree. This will limit students' scheduling flexibility subsequently.

**Ocean, Earth and Atmospheric Sciences**

**Web Site:** http://www.odu.edu/oeas

Fred C. Dobbs, Chair  
David J. Burdige, 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 V/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**

David J. Burdige, 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.

### Biological, Chemical and Physical Oceanography Concentrations

The three oceanography concentrations are designed for students considering graduate work or employment in the pure and applied fields of oceanography. If students select the biological oceanography concentration, they are strongly encouraged to minor in biology and select 12 credits from 300/400 level biology courses. If students select the chemical oceanography concentration, they are strongly encouraged to minor in chemistry and select the following courses: CHEM 211-CHEM 213, CHEM 212-CHEM 214, CHEM 321 and CHEM 322. If students select the physical oceanography concentration, they are strongly encouraged to minor in applied mathematics and select the following courses: MATH 312, MATH 316, MATH 317 and MATH 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, marine geology, geobiology, 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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition (grade of C or better required in both courses)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td></td>
</tr>
<tr>
<td>Met in the major by OR OES 441</td>
<td></td>
</tr>
<tr>
<td>Math 211 Calculus I (required)</td>
<td>4</td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research (met in the major by OES 100G)</td>
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</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>3</td>
</tr>
<tr>
<td>Chem 121 &amp; Chem 122</td>
<td>8</td>
</tr>
<tr>
<td>&amp; Chem 123 &amp; Chem 124</td>
<td></td>
</tr>
<tr>
<td>Impact of Technology (met in the major by OES 220T for earth science education)</td>
<td>0-3</td>
</tr>
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</table>

### Course Requirements – Biological Oceanography Concentration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 121N</td>
<td>General Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 122N</td>
<td>General Biology I Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 123N</td>
<td>General Biology II</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 124N</td>
<td>General Biology II Lab</td>
<td>1</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>OES 111N</td>
<td>Physical Geology</td>
<td>4</td>
</tr>
<tr>
<td>OES 130G</td>
<td>Research Skills and Information Literacy for the Natural Sciences</td>
<td>3</td>
</tr>
<tr>
<td>OES 306</td>
<td>Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>OES 307</td>
<td>Oceanography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>&amp; PHYS 231N</td>
<td>University Physics I</td>
<td>8</td>
</tr>
<tr>
<td>&amp; PHYS 232N</td>
<td>University Physics I Lab</td>
<td></td>
</tr>
<tr>
<td>OES 310</td>
<td>Global Earth Systems</td>
<td>4</td>
</tr>
<tr>
<td>STAT 310</td>
<td>Introductory Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>OES 406</td>
<td>Matlab</td>
<td>1</td>
</tr>
<tr>
<td>OES 440</td>
<td>Biological Oceanography</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 292</td>
<td>Evolution</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 415W</td>
<td>Marine Ecology</td>
<td>4-5</td>
</tr>
<tr>
<td>or OES 451</td>
<td>Data Collection and Analysis in Oceanography</td>
<td></td>
</tr>
<tr>
<td>CHEM 211</td>
<td>Organic Chemistry I Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>Organic Chemistry I Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>Organic Chemistry II Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 441</td>
<td>Biochemistry Lecture</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two of the following electives: 6

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OES 403W</td>
<td>Aquatic Pollution</td>
<td></td>
</tr>
<tr>
<td>OES 404</td>
<td>Environmental Physiology of Marine Animals</td>
<td></td>
</tr>
<tr>
<td>OES 405</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
<tr>
<td>OES 410</td>
<td>Chemical Oceanography</td>
<td></td>
</tr>
<tr>
<td>OES 412</td>
<td>Global Environmental Change</td>
<td></td>
</tr>
<tr>
<td>OES 416</td>
<td>Electronics and Oceanographic Instrumentation</td>
<td></td>
</tr>
<tr>
<td>OES 420</td>
<td>Hydrogeology</td>
<td></td>
</tr>
<tr>
<td>OES 448</td>
<td>Population Ecology</td>
<td></td>
</tr>
<tr>
<td>OES 451</td>
<td>Data Collection and Analysis in Oceanography</td>
<td></td>
</tr>
<tr>
<td>or OES 451</td>
<td>(satisfies oral and upper-division written communication requirement)</td>
<td></td>
</tr>
<tr>
<td>OES 452</td>
<td>Microbial Ecology of the Oceans</td>
<td></td>
</tr>
<tr>
<td>OES 441 &amp; OES 442W</td>
<td>Ocean and Earth Sciences Field Study</td>
<td>6</td>
</tr>
<tr>
<td>or OES 442W</td>
<td>Ocean and Earth Sciences Field Study II (satisfies oral and upper-division written communication requirement)</td>
<td></td>
</tr>
</tbody>
</table>

### Total Hours

- **33-42**

**Students must select one of the following options:**

### Four-Year Plan - Biological Oceanography Concentration - BS (http://catalog.odu.edu/undergraduate/collegeofsciences/oceanearthatmosphericsciences/oeas-biologeanoceanography-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.
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
OEAS 130G Research Skills and Information Literacy for the Natural Sciences 3
MATH 212 Calculus II 4
OEAS 306 Oceanography 3
OEAS 307 Oceanography Laboratory 1
PHYS 231N University Physics I and University Physics 8
OEAS 310 Global Earth Systems 4
STAT 310 Introductory Data Analysis 3
OEAS 406 Matlab 1
OEAS 415 Waves and Tides 3
OEAS 451 Data Collection and Analysis in Oceanography 4
GEOG 402 Geographic Information Systems 3
MATH 307 or MATH 280 Transfer Credit for Ordinary Differential Equations 3
PHYS 319 Analytical Mechanics 3
STAT 437 Applied Regression and Time Series Analysis 3
OEAS 441 Ocean and Earth Sciences Field Study I and Ocean and Earth Sciences Field Study II (satisfies oral and upper-division written communication requirement.) 6
Select two electives from one of the following three option areas: 6
Option A
GEOG 404 Digital Techniques for Remote Sensing
GEOG 419 Spatial Analysis of Coastal Environments
GEOG 432 Advanced GIS
OEAS 430 Introduction to Geophysics
OEAS 441 Introduction to Geophysics
OEAS 434 Geodynamics
Option B
MATH 401 Partial Differential Equations
MATH 408 Applied Numerical Methods I
MATH 457 Mathematics in Nature
OEAS 430 Introduction to Geophysics
OEAS 434 Geodynamics
Option C
CEE 330 Hydromechanics
CEE 482 Introduction to Coastal Engineering
MAE 205 Dynamics
MATH 401 Partial Differential Equations
MATH 408 Applied Numerical Methods I
OEAS 466W Introduction to Mitigation and Adaptation Studies
Total Hours 73

Four-Year Plan - Chemical Oceanography Concentration - BS (http://catalog.odu.edu/undergraduate/collegeofsciences/oceanearththatmosphericsciences/oeas-chemoceanography-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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
OEAS 130G Research Skills and Information Literacy for the Natural Sciences 3
MATH 212 Calculus II 4
PHYS 231N University Physics I and University Physics 8
OEAS 306 Oceanography 3
OEAS 307 Oceanography Laboratory 1
STAT 310 Introductory Data Analysis 3
OEAS 310 Global Earth Systems 4
OEAS 405 Physical Oceanography 3
OEAS 406 Matlab 1
OEAS 415 Waves and Tides 3
OEAS 451 Data Collection and Analysis in Oceanography 4
GEOG 402 Geographic Information Systems 3
MATH 307 or MATH 280 Transfer Credit for Ordinary Differential Equations 3
PHYS 319 Analytical Mechanics 3
STAT 437 Applied Regression and Time Series Analysis 3
OEAS 441 Ocean and Earth Sciences Field Study I and Ocean and Earth Sciences Field Study II (satisfies oral and upper-division written communication requirement.) 6
Select two electives from one of the following three option areas: 6
Option A
GEOG 404 Digital Techniques for Remote Sensing
GEOG 419 Spatial Analysis of Coastal Environments
GEOG 432 Advanced GIS
OEAS 430 Introduction to Geophysics
OEAS 441 Introduction to Geophysics
OEAS 434 Geodynamics
Option B
MATH 401 Partial Differential Equations
MATH 408 Applied Numerical Methods I
MATH 457 Mathematics in Nature
OEAS 430 Introduction to Geophysics
OEAS 434 Geodynamics
Option C
CEE 330 Hydromechanics
CEE 482 Introduction to Coastal Engineering
MAE 205 Dynamics
MATH 401 Partial Differential Equations
MATH 408 Applied Numerical Methods I
OEAS 466W Introduction to Mitigation and Adaptation Studies
Total Hours 73

Four-Year Plan - Physical Oceanography Concentration - BS (http://catalog.odu.edu/undergraduate/collegeofsciences/oceanearththatmosphericsciences/oeas-physcialoceanography-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.
## Course Requirements – Geology Concentration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 121N</td>
<td>General Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 122N</td>
<td>General Biology I Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 123N</td>
<td>General Biology II</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 124N</td>
<td>General Biology II Lab</td>
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</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>OEAS 130G</td>
<td>Research Skills and Information Literacy for the</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Sciences</td>
<td></td>
</tr>
<tr>
<td>OEAS 111N</td>
<td>Physical Geology &amp; Historical Geology</td>
<td>8</td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
<td>8</td>
</tr>
<tr>
<td>&amp; PHYS 232N</td>
<td>University Physics II</td>
<td></td>
</tr>
<tr>
<td>OEAS 306</td>
<td>Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 307</td>
<td>Oceanography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>STAT 310</td>
<td>Introductory Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 310</td>
<td>Global Earth Systems</td>
<td>4</td>
</tr>
<tr>
<td>OEAS 315</td>
<td>Minerals and Rocks</td>
<td>4</td>
</tr>
<tr>
<td>OEAS 344W</td>
<td>Geomorphology</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 320</td>
<td>Sedimentology and Stratigraphy</td>
<td>4</td>
</tr>
<tr>
<td>OEAS 406</td>
<td>Matlab</td>
<td>1</td>
</tr>
<tr>
<td>OEAS 411</td>
<td>Structural Geology</td>
<td>4</td>
</tr>
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</table>

Select one of the following: 3-4 credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEAS 420</td>
<td>Hydrogeology</td>
<td></td>
</tr>
<tr>
<td>OEAS 430</td>
<td>Introduction to Geophysics</td>
<td></td>
</tr>
<tr>
<td>OEAS 434</td>
<td>Geodynamics</td>
<td></td>
</tr>
<tr>
<td>OEAS 451</td>
<td>Data Collection and Analysis in Oceanography</td>
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</table>

Select one of the following: 3 credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>OEAS 303</td>
<td>Paleontology</td>
<td></td>
</tr>
<tr>
<td>OEAS 368</td>
<td>Internship in Ocean and Earth Sciences</td>
<td></td>
</tr>
<tr>
<td>OEAS 403W</td>
<td>Aquatic Pollution</td>
<td></td>
</tr>
<tr>
<td>OEAS 412</td>
<td>Global Environmental Change</td>
<td></td>
</tr>
<tr>
<td>OEAS 413</td>
<td>Environmental Geochemistry</td>
<td></td>
</tr>
<tr>
<td>OEAS 415</td>
<td>Waves and Tides</td>
<td></td>
</tr>
<tr>
<td>OEAS 419</td>
<td>Spatial Analysis of Coastal Environments</td>
<td></td>
</tr>
<tr>
<td>OEAS 430</td>
<td>Introduction to Geophysics</td>
<td></td>
</tr>
<tr>
<td>OEAS 434</td>
<td>Geodynamics</td>
<td></td>
</tr>
<tr>
<td>OEAS 446</td>
<td>Quaternary Geology</td>
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<tr>
<td>OEAS 490</td>
<td>Paleoceanography</td>
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<tr>
<td>OEAS 441</td>
<td>Ocean and Earth Sciences Field Study I</td>
<td>6</td>
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<tr>
<td>&amp; OEAS 442W</td>
<td>Ocean and Earth Sciences Field Study II</td>
<td></td>
</tr>
</tbody>
</table>

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Elective Credit

Elective credit may be needed to meet the minimum requirement of 120 credit hours.

### Upper-Division General Education

For students in the Earth science education concentration, completion of the professional education courses satisfies this requirement. All other students can satisfy this requirement in one of four ways:

- 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

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 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. 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 Office of Clinical Experiences website at [www.odu.edu/occ](http://www.odu.edu/occ).

### 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 have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, [http://www.odu.edu/occ](http://www.odu.edu/occ) and review the Professional 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 Clinical Experiences.

**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 Subject Assessment, Earth and Space Sciences content knowledge (formerly Praxis II) 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.

**Background Clearance Requirement**

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU background check is located at: http://www.odu.edu/success/academic-teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

**Virginia Board of Education Prescribed Assessments for Licensure**

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment
- Praxis Subject Assessment, Earth and Space Sciences content knowledge (test code: 5571) – passing score of 156 required

To review more information on the Virginia Board of Education prescribed assessments visit the Office of Clinical Experiences website, www.odu.edu/ocoe.

**Graduation**

Requirements for graduation include 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, 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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 121N</td>
<td>General Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 122N</td>
<td>General Biology I Lab</td>
<td>1</td>
</tr>
<tr>
<td>STAT 310</td>
<td>Introductory Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 111N</td>
<td>Introductory General Physics</td>
<td>8</td>
</tr>
<tr>
<td>PHYS 112N</td>
<td>and Introductory General Physics</td>
<td></td>
</tr>
<tr>
<td>OEAS 111N</td>
<td>Physical Geology</td>
<td>4</td>
</tr>
<tr>
<td>OEAS 112N</td>
<td>Historical Geology</td>
<td>4</td>
</tr>
<tr>
<td>OEAS 130G</td>
<td>Research Skills and Information Literacy for the Natural Sciences</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 220T</td>
<td>Introduction to Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 306</td>
<td>Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 310</td>
<td>Global Earth Systems</td>
<td>4</td>
</tr>
<tr>
<td>OEAS 303</td>
<td>Paleontology</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 315</td>
<td>Minerals and Rocks</td>
<td>4</td>
</tr>
<tr>
<td>OEAS 344W</td>
<td>Geomorphology</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 408</td>
<td>Astronomy for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>OEAS 441</td>
<td>Ocean and Earth Sciences Field Study I</td>
<td>6</td>
</tr>
<tr>
<td>OEAS 442W</td>
<td>and Ocean and Earth Sciences Field Study II (satisfies oral and upper-division written requirement.)</td>
<td></td>
</tr>
<tr>
<td>OEAS 444 &amp; OEAS 468W</td>
<td>Communicating Ocean Science to Informal Audiences and Research Methods in Math and Sciences (an alternative to OEAS 441-OEAS 442W for the Earth science education emphasis; satisfies oral communication requirement)</td>
<td>6</td>
</tr>
<tr>
<td>Additional electives as needed to meet 120 credit hours; upper-division OEAS electives recommended</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>61</td>
</tr>
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</table>

**The Professional Education core courses and requirements are as follows:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM 101</td>
<td>Step 1 – Inquiry Approaches to Teaching STEM</td>
<td>1</td>
</tr>
<tr>
<td>STEM 102</td>
<td>Step 2 - Inquiry Based STEM Lesson Design</td>
<td>1</td>
</tr>
<tr>
<td>STEM 201</td>
<td>Knowing and Learning in STEM Education</td>
<td>3</td>
</tr>
<tr>
<td>STEM 202</td>
<td>Classroom Interactions in STEM Education</td>
<td>3</td>
</tr>
<tr>
<td>STEM 401</td>
<td>Project Based Instruction in STEM Education</td>
<td>3</td>
</tr>
<tr>
<td>STEM 402</td>
<td>Perspectives on STEM</td>
<td>3</td>
</tr>
<tr>
<td>STEM 485</td>
<td>Apprentice Teaching</td>
<td>9</td>
</tr>
<tr>
<td>OEAS 468W</td>
<td>Research Methods in Math and Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>26</td>
</tr>
</tbody>
</table>

**Four-Year Plan - Earth Science Education Concentration - BS**

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEAS 487</td>
<td>Honors Research in Ocean and Earth Sciences</td>
<td>1-3</td>
</tr>
<tr>
<td>OEAS 497</td>
<td>Special Problems and Research</td>
<td>1-3</td>
</tr>
</tbody>
</table>

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 Prior Learning Assessment 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, OEAS 402, and OEAS 426.

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 404/504</td>
<td>Digital Techniques for Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 462/562</td>
<td>Advanced Spatial Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Interpretive Analysis Courses

Select two of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 404/504</td>
<td>Conservation Biology</td>
<td></td>
</tr>
<tr>
<td>GEOG 420/520</td>
<td>Marine Geography</td>
<td></td>
</tr>
<tr>
<td>GEOG 422W/522</td>
<td>Coastal Geography</td>
<td></td>
</tr>
<tr>
<td>GEOG 490/590</td>
<td>Applied Cartography/GIS</td>
<td></td>
</tr>
<tr>
<td>GEOG 495/595</td>
<td>Topics in Geography</td>
<td></td>
</tr>
<tr>
<td>OEAS 306</td>
<td>Oceanography</td>
<td></td>
</tr>
<tr>
<td>OEAS 344W</td>
<td>Geomorphology</td>
<td></td>
</tr>
<tr>
<td>OEAS 495/595</td>
<td>Special Topics</td>
<td></td>
</tr>
</tbody>
</table>

Capstone Seminar

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG/OEAS</td>
<td>Spatial Analysis of Coastal Environments</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 15

* Advanced approval required

Physics

Web Site: http://www.odu.edu/physics

Charles E. Hyde, Chair
Stephen Buelmann, Chief Departmental Advisor
Sebastian Kuhn, J. Wallace Van Orden, Lawrence Weinstein, Associate Departmental Advisors

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 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. Students must earn a minimum of 150 credits (120 for the undergraduate degree and 30 for the graduate degree).

Degree Requirements

Degree requirements are composed 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 ENGL 221C or ENGL 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 20th 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 261N-PHYS 262N. 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. Please consult the Department of Mathematics section of the Catalog for details.

**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)

<table>
<thead>
<tr>
<th>Skills</th>
<th>credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition (grade of C or better required in both courses)</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 110C English Composition</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 211C English Composition</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 231C Introduction to Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 101R Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 103R Voice and Diction</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 112R Introduction to Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>or DANC/THEA 152R Acting One</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (Satisfied by major)</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture (B.S. students' competence must be at the 102 level. High school credit may satisfy the requirement.)</td>
<td>3</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>CS 120G Introduction to Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>or CS 121G Introduction to Information Literacy and Research for Scientists</td>
<td>3</td>
</tr>
</tbody>
</table>

**Ways of Knowing**

<table>
<thead>
<tr>
<th>Human Creativity</th>
<th>credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 121A Introduction to the Visual Arts</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 122A Visual Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM/THEA 270A Film Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>DANC 185A Dance and Its Audience</td>
<td>3</td>
</tr>
</tbody>
</table>

**Select one of the following:**

<table>
<thead>
<tr>
<th>credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
</tr>
<tr>
<td>3</td>
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<tr>
<td>3</td>
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<td>3</td>
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<tr>
<td>3</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

**Select one of the following:**

| ENGL 110C English Composition | 3 |
| ENGL 211C English Composition | 3 |
| or ENGL 231C Introduction to Technical Writing | 3 |
| Oral Communication | 3 |
| COMM 101R Public Speaking | 3 |
| or COMM 103R Voice and Diction | 3 |
| or COMM 112R Introduction to Interpersonal Communication | 3 |
| or DANC/THEA 152R Acting One | 3 |
| Mathematics (Satisfied by major) | 3 |
| Language and Culture (B.S. students' competence must be at the 102 level. High school credit may satisfy the requirement.) | 3 |
| Information Literacy and Research | 3 |
| CS 120G Introduction to Information Literacy and Research | 3 |
| or CS 121G Introduction to Information Literacy and Research for Scientists | 3 |

**Select one of the following:**

<table>
<thead>
<tr>
<th>Human Creativity</th>
<th>credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 121A Introduction to the Visual Arts</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 122A Visual Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM/THEA 270A Film Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>DANC 185A Dance and Its Audience</td>
<td>3</td>
</tr>
</tbody>
</table>

Old Dominion University 314
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 383T</td>
<td>Technology: Its Nature and Significance</td>
<td></td>
</tr>
<tr>
<td>POLS 350T</td>
<td>Technology and War</td>
<td></td>
</tr>
<tr>
<td>POLS 458T</td>
<td>Weapons of Mass Destruction in Global Security</td>
<td></td>
</tr>
<tr>
<td>STEM 110T</td>
<td>Technology and Your World</td>
<td></td>
</tr>
<tr>
<td>STEM 370T</td>
<td>Technology and Society</td>
<td></td>
</tr>
<tr>
<td>WMST 390T</td>
<td>Women and Technology Worldwide</td>
<td></td>
</tr>
</tbody>
</table>

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
- FST 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)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 312</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 285</td>
<td>Transfer Credit for Calculus III</td>
<td></td>
</tr>
<tr>
<td>MATH 307</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 280</td>
<td>Transfer Credit for Ordinary Differential Equations</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 122N</td>
<td>and Foundations of Chemistry I Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 124N</td>
<td>and Foundations of Chemistry II Laboratory</td>
<td></td>
</tr>
<tr>
<td>CS 150</td>
<td>Problem Solving and Programming I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 261N</td>
<td>Advanced University Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 262N</td>
<td>Advanced University Physics II</td>
<td>4</td>
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<tr>
<td>PHYS 303</td>
<td>Intermediate Experimental Physics</td>
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<tr>
<td>PHYS 319</td>
<td>Analytical Mechanics</td>
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<tr>
<td>PHYS 323</td>
<td>Modern Physics</td>
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</tr>
<tr>
<td>PHYS 355</td>
<td>Mathematical Methods of Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 413</td>
<td>Methods of Experimental Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 420</td>
<td>Introductory Computational Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 425</td>
<td>Electromagnetism I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 452</td>
<td>Introduction to Quantum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 453</td>
<td>Electromagnetism II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 454</td>
<td>Thermal and Statistical Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 455</td>
<td>Mathematical Methods of Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 456</td>
<td>Intermediate Quantum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 499W</td>
<td>Senior Thesis</td>
<td>3</td>
</tr>
<tr>
<td>or PHYS 489W</td>
<td>Senior Thesis I</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 490W</td>
<td>Senior Thesis II</td>
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<tr>
<td>PHYS 120</td>
<td>Physics in the 21st Century</td>
<td>1-2</td>
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<tr>
<td>or PHYS 309</td>
<td>Physics on the Back of an Envelope</td>
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</tr>
<tr>
<td>or ECE 111</td>
<td>Information Literacy and Research for Electrical and Computer Engineering</td>
<td></td>
</tr>
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</table>

Select two of the following: **

- PHYS 313 Elements of Astrophysics
- 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

* 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.

### Four-Year Plan - Physics Major - Research Concentration - BS

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

### Departmental Requirements for Professional Concentration (B)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tr>
<td>MATH 211</td>
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<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 312</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 285</td>
<td>Transfer Credit for Calculus III</td>
<td></td>
</tr>
<tr>
<td>MATH 307</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 280</td>
<td>Transfer Credit for Ordinary Differential Equations</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
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<td>&amp; CHEM 122N</td>
<td>and Foundations of Chemistry I Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 124N</td>
<td>and Foundations of Chemistry II Laboratory</td>
<td></td>
</tr>
<tr>
<td>CS 150</td>
<td>Problem Solving and Programming I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 261N</td>
<td>Advanced University Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 262N</td>
<td>Advanced University Physics II</td>
<td>4</td>
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<tr>
<td>PHYS 303</td>
<td>Intermediate Experimental Physics</td>
<td>3</td>
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<tr>
<td>PHYS 319</td>
<td>Analytical Mechanics</td>
<td>3</td>
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<tr>
<td>PHYS 323</td>
<td>Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 355</td>
<td>Mathematical Methods of Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 413</td>
<td>Methods of Experimental Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 420</td>
<td>Introductory Computational Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 425</td>
<td>Electromagnetism I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 452</td>
<td>Introduction to Quantum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 454</td>
<td>Thermal and Statistical Physics</td>
<td>3</td>
</tr>
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</table>
Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>PHYS 420</td>
<td>Introductory Computational Physics</td>
</tr>
<tr>
<td>PHYS 453</td>
<td>Electromagnetism II</td>
</tr>
<tr>
<td>PHYS 456</td>
<td>Intermediate Quantum Mechanics</td>
</tr>
<tr>
<td>PHYS 499W</td>
<td>Senior Thesis *</td>
</tr>
<tr>
<td>or PHYS 489W</td>
<td>Senior Thesis I</td>
</tr>
<tr>
<td>&amp; PHYS 490W</td>
<td>and Senior Thesis II</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>Physics in the 21st Century</td>
</tr>
<tr>
<td>or PHYS 309</td>
<td>Physics on the Back of an Envelope</td>
</tr>
</tbody>
</table>

Select two of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 313</td>
<td>Elements of Astrophysics</td>
</tr>
<tr>
<td>PHYS 411</td>
<td>Introduction to Atomic Physics</td>
</tr>
<tr>
<td>PHYS 415</td>
<td>Introduction to Nuclear and Particle Physics</td>
</tr>
<tr>
<td>PHYS 416</td>
<td>Introduction to Solid State Physics</td>
</tr>
<tr>
<td>PHYS 417</td>
<td>Introduction to Particle Accelerator Physics</td>
</tr>
</tbody>
</table>

**Four-Year Plan - Physics Major - Professional Concentration - BS**

(http://catalog.odu.edu/undergraduate/collegeofsciences/physics/physics-professional-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**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 Office of Clinical Experiences website at https://www.odu.edu/ oce.

**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 for Admission to an Approved Teacher Education Program**

Old Dominion University students seeking admission to an approved teacher education program must have submitted Praxis Core or approved alternative test of mathematics, reading, and writing (SAT or ACT).

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Office of Clinical Experiences website, http://www.odu.edu/ oce and review the Professional 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 Clinical Experiences.

**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 Subject Assessment, Physics content knowledge (formerly Praxis II) 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.

**Background Clearance Requirement**

Old Dominion University requires a background clearance check of candidates interested in many of the professional education programs. Professional education programs have several field experiences that are required for continuance and graduation from the program. The background clearance must be successfully completed prior to a field experience placement. Candidates will be provided a field experience placement when the background check process is completed with resolution of any issues. The process to complete the ODU clearance background check is located at: http://www.odu.edu/success/academic/teacher-education/placement/background-checks. The ODU clearance process includes: an FBI fingerprint, a child protective service/social service review, and a Virginia State Police sex offender registry review. Candidates interested in the professional education programs are advised to complete this clearance process immediately upon entry into the program since the clearance process takes a minimum of eight weeks to complete.

**Virginia Board of Education Prescribed Assessments for Licensure**

Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment

Praxis Subject Assessment, Physics content knowledge (test code: 5265) – passing score of 147 is required

To review more information on the Virginia Board of Education prescribed assessments visit the Office of Clinical Experiences website, www.odu.edu/ oce.

**Graduation**

Requirements for graduation include 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, completion of the Senior Assessment, completion of the Physics Exit Exam with a minimum score of 20th 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:

Old Dominion University 316
### Departmental Requirements for Education Concentration (C)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 307</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 280</td>
<td>Transfer Credit for Ordinary Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 312</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 285</td>
<td>Transfer Credit for Calculus III</td>
<td></td>
</tr>
<tr>
<td>CHEM 121N</td>
<td>Foundations of Chemistry I Lecture</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 122N</td>
<td>Foundations of Chemistry I Laboratory</td>
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</tr>
<tr>
<td>CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
<td>4</td>
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<tr>
<td>&amp; CHEM 124N</td>
<td>Foundations of Chemistry II Laboratory</td>
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<td>CS 150</td>
<td>Problem Solving and Programming I</td>
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<tr>
<td>PHYS 103N</td>
<td>Introductory Astronomy of the Solar System</td>
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<tr>
<td>or PHYS 104N</td>
<td>Introductory Astronomy of Galaxies and Cosmology</td>
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<tr>
<td>PHYS 261N</td>
<td>Advanced University Physics I</td>
<td>4</td>
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<tr>
<td>PHYS 262N</td>
<td>Advanced University Physics II</td>
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<tr>
<td>PHYS 323</td>
<td>Modern Physics</td>
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<td>PHYS 319</td>
<td>Analytical Mechanics</td>
<td>3</td>
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<tr>
<td>PHYS 303</td>
<td>Intermediate Experimental Physics</td>
<td>3</td>
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<tr>
<td>PHYS 120</td>
<td>Physics in the 21st Century</td>
<td>1</td>
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<tr>
<td>or PHYS 309</td>
<td>Physics on the Back of an Envelope</td>
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</tr>
<tr>
<td>PHYS 355</td>
<td>Mathematical Methods of Physics</td>
<td>3</td>
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<tr>
<td>PHYS 413</td>
<td>Methods of Experimental Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 425</td>
<td>Electromagnetism I</td>
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</tr>
<tr>
<td>PHYS 499W</td>
<td>Senior Thesis *</td>
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<tr>
<td>or PHYS 489W</td>
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<tr>
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* Grade of C or better required in PHYS 499W or both PHYS 489W and PHYS 490W

#### The Professional Education Core Courses and Requirements

<table>
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<tr>
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<td>STEM 102</td>
<td>Step 2 - Inquiry Based STEM Lesson Design</td>
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<td>STEM 201</td>
<td>Knowing and Learning in STEM Education</td>
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<td>STEM 202</td>
<td>Classroom Interactions in STEM Education</td>
<td>3</td>
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<tr>
<td>STEM 401</td>
<td>Project Based Instruction in STEM Education</td>
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<tr>
<td>STEM 485</td>
<td>Apprentice Teaching</td>
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<td>STEM 402</td>
<td>Perspectives on STEM</td>
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<tr>
<td>PHYS 468W</td>
<td>Research Methods in Mathematics and Sciences</td>
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<td>Total Hours</td>
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### 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)

Students in this concentration must earn a minimum of 150 credit hours.

#### Common Course Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 121N</td>
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<td>Foundations of Chemistry I Laboratory</td>
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<td>MATH 211</td>
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<td>MATH 212</td>
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<tr>
<td>MATH 312</td>
<td>Calculus III</td>
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<tr>
<td>or MATH 285</td>
<td>Transfer Credit for Calculus III</td>
<td></td>
</tr>
<tr>
<td>MATH 307</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 280</td>
<td>Transfer Credit for Ordinary Differential Equations</td>
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</tr>
<tr>
<td>CS 150</td>
<td>Problem Solving and Programming I</td>
<td>4</td>
</tr>
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<td>PHYS 261N</td>
<td>Advanced University Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 262N</td>
<td>Advanced University Physics II</td>
<td>4</td>
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<tr>
<td>PHYS 319</td>
<td>Analytical Mechanics</td>
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<td>Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 425</td>
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<td>PHYS 499W</td>
<td>Senior Thesis *</td>
<td>3</td>
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<tr>
<td>or PHYS 489W</td>
<td>Senior Thesis I</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 490W</td>
<td>Senior Thesis II</td>
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</table>

Select one of the following:

- 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

<table>
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<td>Explore Engineering and Technology</td>
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<td>ECE 111</td>
<td>Information Literacy and Research for Electrical and Computer Engineering</td>
<td>2</td>
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<tr>
<td>ECE 201</td>
<td>Circuit Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 202</td>
<td>Circuit Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 241</td>
<td>Fundamentals of Computer Engineering</td>
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<td>ECE 287</td>
<td>Fundamental Electric Circuit Laboratory</td>
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<td>ECE 302</td>
<td>Linear System Analysis</td>
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<tr>
<td>ECE 303</td>
<td>Introduction to Electrical Power</td>
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</tr>
<tr>
<td>ECE 304</td>
<td>Probability, Statistics, and Reliability</td>
<td>3</td>
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<tr>
<td>ECE 313</td>
<td>Electronic Circuits</td>
<td>4</td>
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<tr>
<td>ECE 332</td>
<td>Microelectronic Materials and Processes</td>
<td>3</td>
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<tr>
<td>ECE 381</td>
<td>Introduction to Discrete-time Signal Processing</td>
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<td>ECE 387</td>
<td>Microelectronics Fabrication Laboratory</td>
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<td>ECE 485W</td>
<td>Electrical Engineering Design I</td>
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<tr>
<td>ECE 486</td>
<td>Preparatory ECE Senior Design II</td>
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#### Four-Year Plan - Physics Major with Teacher Education Licensure - BS
(http://catalog.odu.edu/undergraduate/collegeofsciences/physics/physics-physicsed-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.
ECE 487       ECE Senior Design II  2  
ECE Tech Elective I, II, III, IV  12  
ENMA 480      Ethics and Philosophy in Engineering Applications  (meets philosophy and ethics requirement)  3  
Total Hours  131  
* Grade of C or better required in PHYS 499W or both PHYS 489W and PHYS 490W

Five-Year Plan - Dual Degree - Physics and Electrical Engineering -BS  
(http://catalog.odu.edu/undergraduate/collegeofsciences/physics/physics-dualdegree-ee-bs-fouryearplan)  
This is a suggested curriculum plan to complete this degree program in five years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

Departmental Requirements for Concentration E (B.S. Physics and M.B.A.)  
Students in this concentration must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree).

Physics Course Requirements  
MATH 211       Calculus I  4  
MATH 212       Calculus II  4  
MATH 312       Calculus III  4  
& MATH 285  Transfer Credit for Calculus III  
MATH 307       Ordinary Differential Equations  3  
& 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 261N  Advanced University Physics I  4  
PHYS 262N  Advanced University Physics II  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  or PHYS 489W  Senior Thesis  *  
& PHYS 490W  Senior Thesis I and Senior Thesis II  3  
Approved Physics Seminar  1  
Select one of the following:  3  
PHYS 313  Elements of Astrophysics  
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  
* 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  
Total Hours  5  

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  Leadership Dynamics  2  
MGMT 612  Managing in Contemporary Organizations  2  
MGMT 621  Strategic Management  4  
MKTG 608  Fundamentals of Contemporary Marketing  2  
MKTG 617  Marketing Strategy  2  
OPMT 615  Operations & Supply Chain Management  2  
Electives  4  
Total Hours  40  

Five-Year Plan - B.S. Physics and M.B.A.  
(http://catalog.odu.edu/undergraduate/collegeofsciences/physics/physics-dualdegree-mba-fouryearplan)  
This is a suggested curriculum plan to complete this degree program in five years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 319 Analytical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 323 Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>Two 300 or 400-level PHYS courses</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

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-PHYS 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-PHYS 112N and PHYS 231N-PHYS 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 Prior Learning Assessment 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**

http://www.odu.edu/psychology

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**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**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication *</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics **</td>
<td>3</td>
</tr>
<tr>
<td>Language and Culture</td>
<td>0-6</td>
</tr>
<tr>
<td>Information Literacy and Research</td>
<td>3</td>
</tr>
<tr>
<td>Human Creativity</td>
<td>3</td>
</tr>
<tr>
<td>Interpreting the Past</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>The Nature of Science</td>
<td>8</td>
</tr>
<tr>
<td>Impact of Technology</td>
<td>3</td>
</tr>
<tr>
<td>Human Behavior ***</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>41-47</td>
</tr>
</tbody>
</table>

**Baccalaureate**

A grade of C (2.0) or better is required in all courses meeting the Written Communication requirement. MATH 102M/MATH 103M or higher with a grade of C (2.0) or better is required. 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 200-level psychology courses outside PSYC 201S can count toward the major in psychology.
PSYC 201S  Introduction to Psychology  3
PSYC 316  Scientific Reasoning in Psychology  3
PSYC 317  Quantitative Methods  4
PSYC 318W  Research Methods in Psychology  4

Students must select one course from each of the following four Areas:

**Area 1: Biological Bases and Cognition**  3
PSYC 410  Human Cognition
PSYC 413  Sensation and Perception
PSYC 424  Physiological Psychology

**Area 2: Personality and Social Processes**  3
PSYC 304  Social Psychology
PSYC 408  Theories of Personality
PSYC 420  Cross-Cultural Psychology

**Area 3: Developmental Changes**  3
PSYC 322  The Psychology of Adolescence
PSYC 351  Child Psychology
PSYC 353  The Psychology of Adulthood and Aging

**Area 4: Applied Psychology**  3
PSYC 303  Industrial/Organizational Psychology
PSYC 306  Health Psychology
PSYC 344  Human Factors
PSYC 405  Abnormal Psychology

PSYC electives (may include additional Area courses)  12

Total Hours  38

**Elective Credit**

General elective credit will be needed to meet the minimum requirement of 120 credit hours. No 200-level psychology courses outside PSYC 201S can count toward the major in psychology. Students with 200-level psychology courses can use these hours as general elective credit.

**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 316  Scientific Reasoning in Psychology  3
- PSYC 317  Quantitative Methods  4
- PSYC 318W  Research Methods in Psychology  4
- One course from each of the four Areas  12
- Four additional psychology courses (at the 300-400 level; may include additional Area courses)  12

**Four-Year Plan - Psychology - BS**

(http://catalog.odu.edu/undergraduate/collegeofsciences/psychology/psychology-bs-fouryearplan)

This is a suggested curriculum plan to complete this degree program in four years. Please consult information in this Catalog, Degree Works, and your academic advisor for more specific information on course requirements for this degree.

**Four-Year Plan**

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.
The Psychology of Adolescence

Supervised Research

Clinical Supervision in Psychology

Theories of Personality

Personnel Psychology

Organizational Psychology

Sensation and Perception

Physiological Psychology

Social Psychology

Experimental Psychology

Industrial/Organizational Psychology

Applied Experimental Psychology

Junior

First Term | Hours | Second Term | Hours
---|---|---|---
PSYC 316 | 3 | PSYC 317 | 4
PSYC (Area courses) | 6 | PSYC (Area course) | 3
Upper-Division General Education or Minor | 3 | PSYC course | 3
Elective | 2 | Minor* or Elective | 6
---|---|---|---
14 | 16

Senior

First Term | Hours | Second Term | Hours
---|---|---|---
PSYC 318W (C or better required) | 4 | PSYC courses | 6
PSYC (Area course) | 3 | Minor* or elective | 3
PSYC Course | 3 | Electives | 6
Elective | 2 | | |
Upper-Division General Education or Minor | 3 | | |
---|---|---|---
15 | 15

Total credit hours: 60

* A minor is recommended but not required.

Electives

9

12

14

Total credit hours: 120

* PSYC electives (may include additional Area Courses).

** A minor is recommended for completion of upper-division general education but is 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 and MATH 102M or higher or complete them at ODU.

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 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 318W and one course from each of four 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 318W and one course from each of four 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

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 University and Psychology Senior Assessments.

Psychology Assessment

The Psychology Assessment is sent to students via email during their graduating semester approximately one month prior to graduation. Students must complete the assessment in the time frame (typically two weeks)
provided in the email. Students must have applied for graduation in order to receive the assessment. The department will make all reasonable efforts to assure that students have ample opportunity to complete the assessment. However, any student who applies for graduation after the deadline set by the Office of the Registrar must email psychadvising@odu.edu to request the link to complete the assessment within an indicated time frame.

**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 each of the four Areas. 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. Linked 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. Students in the linked program must earn a minimum of 150 credit hours (120 for the undergraduate degree and 30 for the graduate degree). 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. Mary Still). 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 15 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 prior learning assessment options. Interested students should visit the Undergraduate Program office MGB 246 for more information or refer to the section on Prior Learning Assessment in this Catalog.
Patricia and Douglas Perry Honors College

Web Site: http://www.odu.edu/honors

David Metzger, Dean

The Patricia and Douglas Perry 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. Throughout their Honors College experience, students are encouraged to participate in undergraduate research and community engagement starting in their first year with their honors general education courses. In their sophomore year, Honors College students have the opportunity to apply what they have learned through research apprenticeships and by developing a one-credit civic learning project in consultation with the Dean of the Honors College. Contract courses are available for Honors College students to deepen their knowledge of course material for courses on the 300/400 level that are three credits or more. 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. Honors advising sessions encourage students to personalize and co-design their honors experience at Old Dominion through internships and a wide variety of co-curricular activities. Throughout their time in the Honors College, students will create and maintain an E-Portfolio, which will be showcased in their senior year prior to graduation.

The online application for admission into the Honors College is available on the Honors College website: http://www.odu.edu/honors/about/apply. All students must submit a minimum of one letter of recommendation attesting to the applicant’s scholastic ability from an instructor; however, students may submit more letters of recommendation and a portfolio of previous work for a stronger application. Letters and portfolios may be submitted to 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 have the ability to schedule an appointment with the Dean of the Honors College for personalized letters of recommendation.
- 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 $500 to offset the costs of equipment and supplies for the completion of research related to a research apprenticeship, 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, 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 letters of recommendation from college faculty members. Honors College students must maintain at least a 3.25 cumulative grade point average.

Honors College Requirements

Honors General Education and Honors Contract Course Requirements

- Four honors courses *
- Capstone Requirement (select one in addition to the ePortfolio**):
  - 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:
  - Approved Undergraduate Research Course
  - 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 Events ***

* Either honors general education or honors contract.
** An ePortfolio is a digital collection of student work developed across varied contexts (classes, internships, social activities, etc.) over time. As students progress through a course of study at ODU, an ePortfolio can serve as a repository for their work. As a result, when the need arises for students to reflect on and display their experiences, they may draw on the archived material, crafting a showcase portfolio for potential employers and faculty writing recommendations. Due to its digital nature, an ePortfolio allows students to create and share multimedia elements, such as videos, audio files, animation, and so forth. Honors College students will create and maintain an ePortfolio showcasing work in and out of class while in the Honors College, which will be reviewed each semester. The Honors College provides workshops, as well as individualized support to assist students in the development of the ePortfolio.

*** Honors College students are required to attend one campus event per semester for up to 8 semesters.

Undergraduate Research Program. Under the leadership of the Honors College, the undergraduate research program includes an annual symposium, the undergraduate research courses, a recognition program for faculty mentors and student researchers, as well as a robust grant program. The Undergraduate Research Program promotes, supports, and funds the involvement of undergraduate students in the active research community at Old Dominion University. It provides undergraduates with hands-on experience working with faculty on a wide variety of research projects. Faculty mentors help students to acquire research skills early in their undergraduate careers. Later in their academic careers, students use and develop these skills through research-oriented course work, collaborative and faculty-sponsored research, and their own independent research projects, which can be potentially funded through Old Dominion’s Undergraduate
Research and Creativity 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: https://www.odu.edu/honors/research.

**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.

For additional information about the Honors College, visit the web site at http://www.odu.edu/honors or contact:

David Metzger  
Dean of The Patricia and Douglas Perry Honors College  
1126 Monarch Hall  
Old Dominion University  
Norfolk VA 23529-0076  
(757) 683-4865
**School of Continuing Education**

**Web Site:** http://www.odu.edu/cepd

Renee R. Felts, Assistant Vice President  
Clair M. Dorsey, Executive Director

The School of Continuing Education is focused on delivering practical, applied knowledge through its non-credit and credit-bearing courses, certificates and certification preparatory classes. Staff in the college interact with each of the academic colleges to utilize the existing courses in an interdisciplinary fashion, frequently at the request of the military, businesses and various industry sectors.

**Mission**

To meet the evolving needs of our local, regional and global community via online and face-to-face offerings. We help students, professionals and lifelong learners move ahead and stay ahead.

**Vision**

The School of Continuing Education will be the leader in engaging and inspiring students, professionals and lifelong learners to achieve their personal and professional goals.

**Bachelor of Science in Interdisciplinary Studies with a Major in Leadership**

The School of Continuing Education coordinates with the College of Arts and Letters to offer a Bachelor of Science in Interdisciplinary Studies with a major in Leadership. For detailed information on the degree program, please refer to the College of Arts and Letters Interdisciplinary Studies (http://catalog.odu.edu/undergraduate/collegeofartsletters/interdisciplinarystudies) section of this Catalog.

**Center for Professional Development**

The primary mission of the Center for Professional Development (CPD) is to develop interdisciplinary certificate programs targeted for specific groups of professionals. The CPD will work across the ODU campus, including all academic colleges as well Distance Learning, in developing new multidisciplinary certificates. Undergraduate certificate programs in Digital Forensics and Professional Leadership are administered by the Center and the School of Continuing Education.

**Digital Forensics Certificate*  
Roderick Graham, Advisor (rgraham@odu.edu)**

The certificate in Digital Forensics is designed to provide the competencies required to perform specific tasks outlined by the Department of Homeland Security's Cybersecurity Workforce. The curriculum provides a foundation in understanding and applying digital forensic techniques to the investigation of cybercrime. Coursework provides knowledge of digital evidence in criminal activities, accessing such evidence, and analyzing the evidence in order to present it in a court of law. The courses also expose students to tools used in cybercrime, laws related to cybercriminal activity, and theoretical understandings of cybercrime.

An overall grade point average of 2.0 or above in all courses specified as a requirement for the certificate is required for the award of the certificate.

**Program Requirements**

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYSE 404</td>
<td>Law and Digital Forensics</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 407</td>
<td>Digital Forensics</td>
<td>3</td>
</tr>
<tr>
<td>CYSE 409</td>
<td>Crime and Computer Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

*Pending approval by the State Council of Higher Education for Virginia.

**Professional Leadership Certificate**

Dean Claud, Coordinator

The certificate in Professional Leadership is designed to provide students with key concepts related to leadership in work and/or experiential settings. The curriculum focuses on educating students about specific aspects of leadership, including ethics, law and trends in leadership. Students will also gain critical thinking and analytical skills related to decision-making. Courses in the certificate address key areas of leadership to those aspiring to leadership roles in current or future work positions. Coursework provides opportunities for students to formalize their leadership strategies within ethical and legal realms, and to understand the value of critical thinking in leadership roles.

An overall grade point average of 2.0 or above in all courses specified as a requirement for the certificate is required for the award of the certificate.

**Program Requirements**

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS 400</td>
<td>Foundations of Leadership</td>
<td>3</td>
</tr>
<tr>
<td>CPS 410</td>
<td>Leadership Ethics</td>
<td>3</td>
</tr>
<tr>
<td>CPS 412</td>
<td>Leadership and Law</td>
<td>3</td>
</tr>
<tr>
<td>CPS 416</td>
<td>Trends and Issues in Leadership</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours** 12

**Continuing Education Programs**

**Executive Development Program.** The mission of this unit 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 unit offers public programs for individuals seeking professional certificate programs, preparation for certification exams, career advancement and career change.

In addition, the unit develops and delivers custom programs and consulting services to meet specific organizational and employee development needs of businesses and organizations regionally, nationally and internationally.

**Education Programs and Virginia Department of Education Alternative Route to Teacher Licensure (Career Switcher) Program.** The purpose of this unit is to extend to the community special conferences, workshops, seminars, in-service training, and short courses. Drawing on the faculty of the academic colleges 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).

**Continuing Education Programs in Engineering.** This unit offers certificates, workshops, courses and conferences. The courses are designed primarily for adult learners in content and logistics. Most courses are delivered in the late afternoon to early evening at a variety of locations and are delivered online. The courses are delivered in an open enrollment format (open to the general public) as well as in contract training settings. Many engineering disciplines are addressed including project management and systems engineering.

**Continuing Education Programs in Health Sciences.** Short courses, national conferences, workshops, refresher courses, certificate programs and seminars are offered by the different schools in the College of Health Sciences 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 laboratory science, physical therapy, and community health.

Education serves the following functions:

- Licensure and certification for professionals and practitioners,
- Credential and degree achievement and
- 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 Music Division.** The Community Music Division in the College of Arts and Letters offers private music instruction, classes, and ensembles to people of all ages and abilities. For more information, please see the F. Ludwig Diehn School of Music. (p. 147)

**Prior Learning Assessment.** The Prior Learning Assessment unit in the Center for Advising Administration and Academic Partnerships offers students the opportunity to have their prior learning assessed and applied for academic credit. Visit www.odu.edu/priorlearning for more information.

**Career Switcher Alternative Route to Teacher Licensure Program**

Program Director: Lisa M. Temple
Assistant Director for Curriculum and Development: Pete Baker
Assistant Director for Student Support: Samantha Fabio

The Career Switcher program is certified by the Virginia Department of Education.

**PREREQUISITES**

The following requirements must be completed prior to applying to the Old Dominion University Career Switcher Program.

- An application process
- A baccalaureate degree from a regionally accredited college or university
- The completion of requirements for an endorsement in a teaching area or the equivalent through verifiable experience or academic study; [Refer to the Licensure Regulations for School Personnel on the following Web address: http://www.doe.virginia.gov/teaching/licensure/licensure_regs.pdf]
- At least three years of full-time work experience or its equivalent; and
- Virginia qualifying scores on the professional teacher’s assessments as prescribed by the Board of Education. Virginia Communication and Literacy Assessment (VCLA);
- (2) Praxis II (subject area test); and (3) Reading for Virginia Educators (RVE) (if applicable).

**APPLICATION PROCESS**

- Career Switcher Program Application
- Application Fee
- Assessment Exams
- Official Transcripts
- Letter of Intent
- Resume
- Child Abuse and Neglect Training
- First Aid, CPR and AED Training
- Dyslexia Training
- Pre-Assessment Questionnaire Form

**LEVEL I PREPARATION**

Intensive Level I preparation includes a minimum of 180 clock hours of instruction, including field experience. This phase includes, but is not limited to, curriculum and instruction (including instructional technology), reading in the content area, language acquisition, differentiation of instruction, classroom/behavior management, instructional design based on assessment data, human growth and development and other specific course work related to the Virginia Standards of Learning. Level I requirements must be completed during the course of a single year and may be offered through a variety of delivery systems, including distance learning programs. After completing Level I preparation, candidates may be awarded a one-year Provisional Career Switcher License (July 1 to June 30 of given year). The Provisional Career Switcher License is active for the first year after the completion of the program requirements. During this time, candidates are expected to seek and obtain employment in a Virginia public school division or accredited nonpublic school in Virginia. If a candidate is unsuccessful in finding employment during the first year of the life of the Provisional Career Switcher License, the license may be extended annually for up to two additional years upon the recommendation of an employing school division or accredited nonpublic school. A Provisional Career Switcher license is limited to a total of three years.

**NONCREDIT COURSE DESCRIPTIONS**

**XPCL 5000. Foundations of Education. 7 Contact Hours Elementary/Middle/Secondary Education**

This course provides an overview of many issues that are central to the teaching profession including diversity and equity, philosophy’s role in education, instructional technology, legal issues associated with teachers’ and students’ rights and responsibilities, and administering the public education system in the US. In this course, candidates begin the development of their personal educational philosophies and engage in activities that prepare them for deeper, more focused learning in the Career Switcher Program’s subsequent modules.

**XPCL 5005. Curriculum and Instructional Procedures: Design for Effective Instruction. 35 Contact Hours Elementary/Middle/Secondary Education**

This is a course in generic lesson design which provides students with essential ways to design and deliver content that make efficient use of instructional time and current research while also maximizing instructional effectiveness. Emphasis is on efficient use of instructional time, lesson design, assessment tools and relevant and current research. A primary goal of the course is assisting students in their respective development of a holistic attitude toward their instruction that successfully integrates teaching practices to what is to be learned by their students. These generic teaching behaviors identified in the course competencies will be framed within a specific piece of content selected from a subject the student eventually wants to teach and applied through the actual development of classroom lesson plans.

**XPCL 5010. Curriculum and Instructional Procedures: Student Assessment. 7 Contact Hours Elementary/Middle/Secondary Education**

This course is designed to help with data driven instruction. It will differentiate between norm- and criterion references tests. The candidates will explore different test formats and the advantages of using a test blueprint and how to construct and score tests. In addition, the class will present the use of rubrics and portfolios in the classroom with ways to use them effectively.

**XPCL 5015. Curriculum and Instructional Procedures: Exploring the Curriculum Framework. 7 Contact Hours Elementary/Middle/Secondary Education**

Candidates will identify “essential” standards of a lesson and explore how to develop clear learning goals and objectives by using various state and national resources. Candidates will learn how to shift students’ focus from “answer getting” to problem solving and critical thinking by exposing students to a large variety of complex texts in ALL subject areas. Candidates will also connect the standard topics to the prior knowledge of students.

**XPCL 5020 Curriculum and Instructional Procedures: General Classroom Management. 14 Contact Hours. Elementary/Middle/Secondary Education**

This is a course in general classroom management that will develop the candidate’s philosophy of management and establish the candidate’s style. It will address the classroom environment, importance of procedures,
communication and discipline and feelings of belonging for all students as well as preparing the climate for diverse strategies.

**XPCL 5025. Human Growth and Development: Fundamentals of Human Growth and Development. 7 contact hours Elementary/Middle/Secondary Education**

Candidates will learn theoretical concepts of Human Growth and Development to include the cognitive, social, emotional, physical, and moral domains and how these domains make up the total person. Additionally, they will learn how these factors influence the student’s ability to learn.

**XPCL 5030. Human Growth and Development: Student with Special Needs. 7 contact hours Elementary/Middle/Secondary Education**

The purpose of this module is to introduce Career Switcher participants to the fundamentals of providing quality instruction to students with diverse needs. The module will focus on legal issues surrounding special education, and will extend to strategies to provide an effective learning environment for all students.

**XPCL 5035. Curriculum and Instructional Procedures: Dealing Effectively with Parents, Students and School Culture. 7 contact hours Elementary/Middle/Secondary Education**

Candidates will become familiar with the influence of socio-economic status (SES) on a person’s worldview, especially as it applies to communicating with parents and students. They will learn effective communication strategies and become familiar with the professional expectations parents, students, faculty and administrators have of them. Additionally, they will clarify their expectations of the teaching profession along with typical expectations of their supervisors and colleagues.

**XPCL 5040. Curriculum and Instructional Procedures: Technology Standards for Instructional Personnel. 14 contact hours Elementary/ Middle/Secondary Education**

The Technology Standards for Instructional Personnel course is required for teacher licensure in the state of Virginia and is essential to preparing pre-service teachers for the 21st century classroom. Candidates will learn strategies for effective technology integration and develop the skills associated with the Commonwealth of Virginia’s Technology Standards for Instructional Personnel. The course addresses the Technology Standards for Instructional Personnel (TSIP) competencies and upon completion students should be able to pass or apply for exemption from their school district’s TSIP exam.

**XPCL 5043. Curriculum and Instructional Procedures (Classroom and Behavior Management): Secondary Classroom Management Techniques. 14 contact hours Middle and Secondary Education**

This course has 10 sections that are designed to lead the Career Switcher to be confident in their ability to create a positive classroom environment that will facilitate academic success for all students. The 10 sections of this course (Discipline Plans; Procedures & Routines; Positive Learning Environment; Positive Relationships; Teacher Preparation; Student Responsibility; Classroom & Instructional Triggers; Pro Active Prevention; Dealing with Chronic Disruptions; How to Stay in Control when dealing with Classroom Management issues) will address professionally appropriate behavioral and management techniques, building an appropriate educational environment through classroom community and positive redirection of behavior as well as the development of social skills and self-discipline.

**XPCL 5045. Curriculum and Instructional Procedures: Differentiation of Instruction. 7 contact hours Middle and Secondary Education**

Candidates will learn strategies to deal effectively with at-risk students based on theoretical concepts. Additionally, they will learn the strategies to motivate students, strategies to engage them more in the learning process, and how to successfully cope with the stressors of dealing with challenging situations.

**XPCL 5046. Curriculum and Instructional Procedures: Writing to Learn Across the Curriculum. 7 contact hours Middle and Secondary Education**

This course reviews, evaluates, and promotes the concept that learning in all subjects can be more meaningful and enhanced by using writing and thinking strategies to better convey, comprehend and retain course content.

**XPCL 5049. Curriculum and Instructional Procedures: Reading Strategies. 21 contact hours Elementary Education**

This course is designed to provide information on balance reading instruction in grades PRE-K-6. Topics will include: language acquisition, phonemic awareness, word identification strategies, vocabulary development strategies, comprehension strategies, and reading-writing connections.

**TLED 568 Language Acquisition and Reading for Students with Diverse Learning Needs. 3 semester hours Elementary and Middle Education (Online)**

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. Course content includes the theoretical framework and basic instructional practices and strategies associated with literacy instruction in an elementary classroom. Emphasis is placed on instructional techniques to assist individuals with disabilities achieve basic reading skills and advanced comprehension. Effective reading strategies and curricula for individuals with disabilities will also be reviewed. (Lecture 3 hours; 3 credits).

**XPCL 5050. Curriculum and Instructional Procedures: Teacher Questioning Skills. 7 contact hours Middle and Secondary Education**

This course focuses on the principles of the Socratic method and how teachers in the classroom can employ it. We’ll spend time discussing inquiry-based instruction and how it positively impacts student learning and engagement. We will examine and demonstrate the use of teacher created simulations and active participation activities to assist student learning. We will learn the positive impact of creating context before delivering information. Research suggests that an inquiry-based approach is the most effective way to engage students, motivate them, leading to constructive participation and retention of material.

**XPCL 5052. Curriculum and Instructional Procedures: Elementary Education Reading Methods. 21 contact hours Elementary Education**

This course is a methods course that focuses on the teaching and learning of reading. It will allow students the opportunity to apply knowledge gained in their Reading Strategies course work. It will consist of both theory and practice in which components of a comprehensive reading program are modeled, demonstrated, and experienced. Students in this course will participate in a variety of activities that will enhance their understanding of literacy teaching and learning with elementary students.

**XPCL 5053. Curriculum and Instructional Procedures: Independent Study. 30 contact hours Elementary Education**

This course is designed to enhance the pre-service teacher’s understanding of the emergent, beginning, transitional, and instructional readers in elementary grades and the implementation of practical strategies that will help early learners become successful readers. Pre-service teachers will have the opportunity to design and create learning opportunities for their prospective classroom.

**XPCL 5055. Curriculum and Instructional Procedures: Helping Students to Become Confident Readers 14 contact hours Middle and Secondary Education**

Candidates will learn methods to identify students who are struggling readers in their content class and to design strategies and activities for content learning plans which differentiate to the reading instructional needs of these students.

**XPCL 5065. Curriculum and Instructional Procedures: Content Training 21 contact hours Elementary/Middle/Secondary**

Education Candidates will learn specific training based on their endorsement area. These classes introduces unit planning, pacing, lesson planning,
teaching strategies and classroom management. Discussions, lectures, demonstrations, and some role playing will be introduced.

**XPCL 5070. Curriculum and Instructional Procedures: Dealing with At-Risk Students. 7 contact hours Middle and Secondary Education**

Candidates will learn strategies to deal effectively with at-risk students based on theoretical concepts. Additionally, they will learn the strategies to motivate students, strategies to engage them more in the learning process, and how to successfully cope with the stresses of dealing with this challenging cohort.

**XPCL 5075. Curriculum and Instructional Procedures: Preparing an Effective Lesson Plan. 7 contact hours Middle and Secondary Education**

This module in generic lesson design review provides candidates essential ways to review the design, delivery, and assessment of Learning Plans. Emphasis is on efficient use of instructional time, lesson design, assessment tools and relevant and current research. A primary goal of the workshop is assisting students in their respective development of a holistic attitude toward their instruction that successfully integrates teaching practices to what is to be learned by their students. These generic teaching behaviors identified in the DEI course competencies will be framed, reviewed and critiqued within the content specific Learning Plans submitted. Results of the critiques will be shared with the authors of the learning plans.

**XPCL 5077 Curriculum and Instructional Procedures: The Management of Learning and Instruction. 7 contact hours Elementary/Middle/Secondary Education**

Classroom Management Techniques that will develop the candidate’s plan for the management of instruction by developing a specific Classroom Management Plan to fit the grade level and content of the teacher. Candidates will address the classroom environment, importance of procedures, communication and discipline.

**XPCL 5080. Curriculum and Instructional Procedures: Issues and Answers for New Teachers. 7 contact hours Elementary/Middle/Secondary**

Education Issues and Answers for New Teachers for Career Switchers is designed to support new teachers and facilitate the successful entry of transitioning/beginning teachers into the teaching profession by addressing topics that impact their day to day professional and teaching decisions.

**XPCL 5095. Practicum Observation. 30 contact hours Elementary/Middle/Secondary**

Experiences in PK12 classrooms represent an important component within the Career Switcher Program and all high-quality teacher preparation programs. Required in-school observation offers participants the opportunity to make contacts in school districts while gaining knowledge about teacher responsibilities and instructional strategies. All Career Switcher candidates are required to complete a minimum of 30 practicum hours by reflecting on the Professional Study Requirements and how it correlates with the Career Switcher Program’s Enduring Understandings (i.e., VDOE’s Uniform Teacher Performance Standards).

**XPCL 6000. Curriculum and Instructional Procedures: Lesson Plan Presentation. 1 contact hour Elementary/Middle/Secondary Education**

All Career Switcher candidates all required to present a 1 hour lesson plan. The lesson plan will be assessed by instructor’s and peers.

**XPCL 6005 Elementary Education Classroom Management 14 contact hours**

Students will formulate a personal philosophy of classroom management, examine effective techniques for arranging the classroom, formulating classroom rules, identifying and teaching classroom procedures and routines. This course will also prepare prospective teachers with respected philosophies and approaches that deal with appropriate social behaviors and classroom management systems, and provide strategies and suggestions that will enable them to be successful and confident while compare the beliefs and strategies of selected theorists that relate to effective classroom management (i.e. Skinner, Gordon and Dreikurs).

**LEVEL II PREPARATION**

Preparation begins during the first year of employment. Career Switchers attend a minimum of five seminars to expand the intensive preparation requirements associated with instructional topics. The five seminars award a minimum of 20 cumulative instructional hours and feature various instructional techniques. During Level II, a school mentor is assigned to assist the candidate throughout their first year of employment.

**XPCL 5085. Behavior Management. 4 contact hours**

Candidates will acquire strategies to help prevent behavior problems, identify actions that need to be taken when behavior problems occur, and learn how to effectively help students resolve problems in the classroom.

**XPCL 5086. Empowering Teachers who serve English as a Language Learners (ESL). 4 contact hours**

The ESL workshop is designed to give new teachers some basic information about who the ESL students are. The workshop is mandatory because at some point of the participants teaching experience they will have ELL students in their classroom. The participants will learn how the ESL students make it into the classroom. Participants will also get some teaching strategies useful when differentiating their instruction for English Language Learners. The goals of the workshops are to identify how these ESL students are enrolled, demonstrate and create awareness about ESL students various Linguistic Proficiency level and what that means to the classroom teacher. Participants will become familiar with ESL Assessment like the WAPT and annual ACCESS for ESL students. Participants will learn about culture and multicultural in the classroom and how to use this knowledge when planning instruction. Finally, participants will develop awareness about LEP students SOL accommodations and how these accommodations impact ESL students with Special Education needs.

**XPCL 5087 School Law: Basics for Teachers. 4 contact hours**

Participants will be introduced to legal concepts related to their employment as teachers including their duties to students, education malpractice, employment rights, and constitutional rights such as free speech, free exercise of religion, and the right to be free from discrimination and harassment in the workplace. In groups, participants will grapple with real-life scenarios and discuss court decisions and school division policies. Professionalism, especially with regard to social media, will be emphasized.

**XPCL 5088. Strategies for Success in the Classroom. 4 contact hours**

Candidates will acquire practical strategies that they will be able to use with their students. This workshop includes instructional, vocabulary, memory, and review activities that can be used with any student, including slow learners and special education students.

**XPCL 5089. Poverty: Students Achievement for Rural Urban Learners. 4 contact hours**

Candidates will learn strategies to promote students’ academic success effectively with urban and rural learners in poverty based on theoretical concepts. Additionally, they will gain insights regarding the impact of poverty for schools, leaders, teachers and students. The participants will engage in a variety of experiences for adult learners to increase the teachers’ awareness of poverty and educators’ roles to address student scholastic achievement in school. The workshop will explore through the use of this PowerPoint presentation as guidance document to support practical application in this seminar. This interactive session will highlight the poverty research by Dr. Ruby Payne.

**XPCL 5090. The Teacher as a Professional: Communicating with Stakeholders. 4 contact hours**

Participants will become familiar with the issues and standards related to professionalism and teacher evaluation. The participants will become familiar with The Virginia Standards for the Professional Practice of Teachers (VSPP) and discuss expectations for teacher conduct.
within and without the classroom. Concrete strategies and tools for interaction with students, parents, administrators, and colleagues will be provided. Participants will engage in role-play to appreciate their responsibility in building supportive relationships with their students and their families. In addition, Assessment of, and for, Student Learning will be addressed, as grading is the primary mode of communication with parents, particularly at the secondary level.

**XPCL 5091. Parents: A User's Guide. 4 contact hours**

This workshop will deal with the relationship teachers need to develop with parents, outline concerns from a parent's perspective, from a school's perspective, and develop responses to those concerns. This workshop will employ teaching strategies embedded into the PowerPoint, therefore providing practical application to the content (Communication with Parents). The agenda will include overviews and strategies, definition of stakeholders, analysis of the types of teacher-parent communication, presentation of positive techniques and strategies, and the review, evaluation, and practical use of authentic case studies.

**XPCL 5093. Diversity in the Classroom. 4 contact hours**

Participants will define diversity and identify what constitutes diversity in the classroom. Students will discern personal subjectivities and examine how those subjectivities affect student populations in the classroom. Students will understand the microsystem, exosystem, and macrosystem that influences the development of individuals through Bronfenbrenner’s Ecological Model. Students will engage with culture, language, and socioeconomic status to gain a deeper understanding of the backgrounds students come with to school.
The Old Dominion University Graduate School is proud to be a part of a community of scholars dedicated to the principles of equity, inclusion, and diversity. The School's first priority is the provision of the richest and most effective educational experience possible. We recognize the unique contribution of each person engaged in graduate study at Old Dominion University and encourage applicants from individuals reflective of underrepresented and underserved populations.

In particular, the Graduate School embraces the principles that:
1) A diverse graduate student body broadens the talent pool and best serves the interests of higher education and our nation;
2) A diverse student body enhances respect for diverse opinions and intellectual exploration, regardless of the source of that new knowledge;
3) Our graduates will work and thrive in a diverse environment, fostering that inclusiveness in graduate education promotes the ultimate success of our graduates.

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Officers of the Administration

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Alla P. Zareva (2019; 2009). Professor of English. B.A., College of International Tourism (Bulgaria); M.A., Veliko Turnovo University (Bulgaria); Ph.D., University of Georgia.

Susan Zehra (2018; 2018). Lecturer of Computer Science. B.S., Jamia Millia Islamia (India); M.S., Norfolk State University.


Christian W. Zemlin (2016; 2011). Associate Professor of Electrical and Computer Engineering. B.Sc., M.Sc., Technical University of Berlin (Germany); Ph.D., Humboldt University (Germany).

Jing Zhang (2018; 2012). Associate Professor of Management. B.A., M.A., Renmin University (China); Ph.D., National University of Singapore.

Junfang Zhang (2016; 2016). Head of Systems Development and Librarian II. B.S., M.S., Peking University (China); C.A.S., University of Illinois at Urbana-Champaign.

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 (2018; 2012). Associate Professor of Information Technology/Decision Sciences. B.S., M.S., Fudan University (China); Ph.D., University of Minnesota - Minneapolis.

Xiaoyu Zhang (2019; 2013). Associate Professor of Mechanical and Aerospace Engineering. B.S., M.S., Nanjing University of Aeronautics and Astronautics (China); Ph.D., University of Connecticut.

Yucheng Zhang (2015; 2015). Assistant Professor of Electrical and Computer Engineering. B.S., M.S., Huazhong University of Science and Technology (China); Ph.D., University of South Carolina - Columbia.

Danella Zhao (2016; 2016). Associate Professor of Computer Science. B.S., Zhejiang University; M.S., Ph.D., State University of New York at Buffalo.

Xianrong Zheng (2015; 2015). Assistant Professor of Information Technology and Decision Sciences. B.S., M.S., University of Science and Technology of China; Ph.D., Queen's University (Canada).

Haiwen Zhou (2015; 2002; 2005). Professor of Economics. B.A., Nankai University (China); M.A., Zhongshan University (China); Ph.D., University of Maryland - College Park.

Hongyang Zhou (2018; 2018). Visiting Professor of Information Technology and Decision Sciences. B.S., Zhejiang University (China); M.A., Ph.D., Ohio State University.

Yilun Zhou (2018; 2018). Assistant Professor of Human Movement Sciences. B.S., Beijing Sport University (China); M.S., Ph.D., University of Illinois-Urbana-Champaign.

Ruhai Zhou (2015; 2004). Professor of Mathematics and Statistics. B.S., M.S., Nanjing University (China); Ph.D., University of New Mexico.

Xihe Zhu (2015; 2009). Associate 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 Accountancy. 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.

Joshua N. Zingger (2015; 2015). Assistant Professor of Political Science and Geography. B.A., Coe College; M.A., Ph.D., Binghamton University - SUNY.

Mohammad Zubair (2002; 1987). Professor of Computer Science. B.S., Delhi University (India); Ph.D., Indian Institute of Technology (India).

* The listing reflects the faculty as of June 1, 2019. 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
Betty Alexy, Associate Professor Emerita of Nursing
Dwight Allen, Eminent Scholar Emeritus of Educational Reform and Professor Emeritus
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
Larry Atkinson, Eminent Scholar Emeritus and Professor Emeritus of Ocean, Earth and Atmospheric Sciences
Han P. Bao, Professor Emeritus of Mechanical and Aerospace Engineering and Mitsubishi Kasei Professor Emeritus of Engineering Manufacturing
Barbara R. Bartkus, University Professor Emerita and Associate Professor Emerita of Management
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
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
Martyn Bradley, Associate Athletic Director Emeritus for Sports Medicine and Athletic Training
William H. Brenner, Professor Emeritus of Philosophy and Religious Studies
John P. Broderick, University Professor Emeritus and Professor Emeritus of English
Kenneth G. Brown, Professor Emeritus of Chemistry and Biochemistry
Lindal Buchanan, Associate Professor Emerita of English and Women’s Studies
Katherine T. Bucher, Professor Emerita of Educational Curriculum and Instruction
Dana Burnett, Professor of Practice Emeritus of Educational Foundations and Leadership
Dianne Carmody, University Professor Emerita and Associate Professor Emerita of Sociology and Criminal Justice

Leslie G. Carr, Associate Professor Emeritus of Sociology and Criminal Justice
Jimmie Carraway, University Distinguished Teacher Emeritus and Senior Lecturer Emeritus of Information Technology and Decision Sciences
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
Paul Champagne, Professor Emeritus of Management
Kwang S. Choi, Associate Professor Emeritus of Finance
Kae H. Chung, Professor Emeritus of Management
Forrest P. Clay Jr., Professor Emeritus of Physics
Sheri R. Colberg-Ochs, Professor Emerita of Human Movement Sciences
Charlie H. Cooke, Professor Emeritus of Mathematics and Statistics
Gary E. Copeland, Professor Emeritus of Physics
Joseph Cosco, Associate Professor Emeritus of English
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
Robert F. Curry, Director Emeritus of Advising for Distance Learning
Ram C. Dahiya, Eminent Scholar Emeritus and Professor Emeritus of Mathematics and Statistics
Kenneth G. Daley, University Professor Emeritus and Professor Emeritus of Art
Dennis A. Darby, Professor Emeritus of Ocean, Earth and Atmospheric Sciences
Daniel M. Dauer, Eminent Scholar Emeritus and Professor Emeritus of Biological Sciences
Donald D. Davis, Associate Professor Emeritus of Psychology
Frank P. Day, Eminent Scholar Emeritus and Professor Emeritus of Biological Sciences
Chandra R. de Silva, Professor Emeritus of History
Diana L. Deadrick, Associate Professor Emerita of Management
Walter F. Deal, III, Associate Professor Emeritus of Occupational and Technical Studies
Valerian Derlega, Professor Emeritus of Psychology
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 Emeritus of Teaching and Learning

Lawrence G. Dotolo, President Emeritus of the Virginia Tidewater Consortium

Michael J. Doviak, Associate Professor Emeritus of Mathematics and Statistics

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

James Duffy, Associate Vice President Emeritus for Academic Affairs

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

Carolyn Eakin, Director Emerita of Technology and Data Analysis

Patricia Edwards, Senior Lecturer Emerita of Art

Elizabeth Esinhart, Senior Lecturer Emerita of Political Science and Geography

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

Dale Feltes, Director Emeritus of Design and Construction

Charlene E. Fleener, Associate Professor Emerita of Teaching and Learning

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

Frederick G. Freeman, Professor Emeritus of Psychology

Morel Fry, Assistant University Librarian Emerita for Administration

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

Myron Glassman, Professor Emeritus of Marketing

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

Gail Grisetti, Associate Professor Emerita of Physical Therapy and Athletic Training

Douglas G. Greene, Professor Emeritus of History

John R. Hackworth, University Professor Emeritus and Associate Professor Emeritus of Engineering Technology

David R. Hager, Professor Emeritus of Political Science and Higher Education Administration

Hiroyuki Hamada, Associate Professor Emeritus of Exercise Science, Sport, Physical Education and Recreation

David F. Harnage, Chief Operating Officer Emeritus

Lawrence J. Hatab, Professor Emeritus of Philosophy and Religious Studies, Louis I. Jaffe Professor Emeritus of Arts and Letters, Eminent Scholar Emeritus, and University Professor Emeritus

Harold G. Hawn, Professor Emeritus of Music

John Heinbockel, Professor Emeritus of Mathematics and Statistics

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

Laurie J. Henry, University Professor Emerita and Associate Professor Emerita of Accountancy

Louis H. Henry, Professor Emeritus of Economics and Dean Emeritus of the Honors College

Carol F. Hines, Associate Professor Emerita of Art

S. Philip Hines Jr., Associate Professor Emeritus of English

Brian Hodson, Director Emeritus of Information Technology in the Darden College of Education

John F. Holley, Associate Professor Emeritus of Foreign Languages and Literatures

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

Michael Hucles, Associate Professor Emeritus of History

Sylvia Hudgins, Professor Emerita of Finance

Jesse W. Hughes, Professor Emeritus of Accounting

Natalie Hutchinson, Senior Lecturer Emerita of Mathematics and Statistics

Samir Ibrahim, Professor Emeritus of Mechanical and Aerospace Engineering

Linda Irwin-DeVitis, Professor Emerita of Teaching and Learning

Thomas Isenhour, Professor Emeritus of Chemistry and Biochemistry

Arminda Israel, Coordinator Emerita of the Military Career Transition Program and Academic Advisor Emerita

Louis H. Janda, Associate Professor Emeritus of Psychology

James Jarrett, Professor Emeritus of Human Movement Sciences

David E. Johnson, Associate Professor Emeritus of Art

Lynn Johnson, Senior Lecturer Emerita of Management

Roger A. Johnson, Associate Professor Emeritus of Educational Curriculum and Instruction
Kneeland Nesius, University Professor Emeritus of Biological Sciences
Ahmed K. Noor, Eminent Scholar Emeritus and Professor Emeritus of Modeling, Simulation and Visualization Engineering
Ali Nowroozi, Professor Emeritus of Ocean, Earth and Atmospheric Sciences
George F. Oertel, Professor Emeritus of Ocean, Earth and Atmospheric Sciences
Virginia S. O'Herron, University Librarian Emerita
Richard Overbaugh, Professor Emeritus of Teaching and Learning
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
Kathy L. Pearson, University Professor Emerita and Associate Professor Emerita of History
Janet Peery, University Professor Emerita and Professor Emerita of English
Victor A. Pickett, Professor Emeritus of Art
Patricia Pleban, Associate Professor Emerita of Chemistry and Biochemistry
Deborah Polca, Senior Associate Athletic Director Emerita
Norman H. Pollock, Associate Professor Emeritus of History
W. Maurice Pritchard, Professor Emeritus of Physics
Anthony J. Provenzano, Professor Emeritus of Ocean, Earth and Atmospheric Sciences
David Putney, Associate Professor Emeritus of Philosophy and Religious Studies
David Radcliffe, Associate Director Emeritus for Military Operations
Philip Raisor, Professor Emeritus of English
John W. Ramsey, Professor Emeritus of Political Science
Sharon Raver-Lampman, University Professor Emerita and Professor Emerita of Communication Disorders and Special Education
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
Theodore P. Remley, Jr., Professor Emeritus of Counseling and Human Services
Lindsay Rettie, Professor Emeritus of Dental Hygiene and Dental Assisting and Dean Emerita of the College of Health Sciences
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
June Ritchie, Associate Director Emerita, Center for Learning and Teaching
John M. Ritz, Professor Emeritus of STEM Education and Professional Studies
A. Sidney Roberts Jr., Professor Emeritus of Mechanical Engineering
Jack E. Robinson, Associate Professor Emeritus of Educational Foundations and Leadership
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
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
Joanne Scheibman, Associate Professor Emerita of English
Carl 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
Tim Seibles, Professor Emeritus of English
Gregory V. Selby, Professor Emeritus of Mechanical and Aerospace Engineering
Joseph C. Sever, Jr., Associate Professor Emeritus of Communication Disorders and Special Education
David L. Shores, Professor Emeritus of English
Carol Simpson, Professor Emerita of Ocean, Earth and Atmospheric Sciences and Provost and Vice President for Academic Affairs Emerita
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
Thomas Somma, Associate Professor Emeritus of Medical Diagnostic and Translational Sciences
Daniel Sonenshine, Professor Emeritus of Biological Sciences
Randall S. Spencer, Professor Emeritus of Ocean, Earth and Atmospheric Sciences
Judith M. St. George, Clinical Supervisor Emerita of Student Health Services
William D. Stanly, Eminent Professor Emeritus of Engineering Technology
Peter C. Stewart, Associate Professor Emeritus of History
Maureen D. Stiner, Clinical Supervisor Emerita of Student Health Services
Kostas St. John, Professor Emeritus of Electrical and Computer Engineering
Raymond S. Strangways, Professor Emeritus of Economics
Glen Sussman, University Professor Emeritus and Professor Emeritus of Political Science and Geography
R. James Swanson, University Professor Emeritus and Professor Emeritus of Biological Sciences
Mary M. Swartz, Registrar Emerita
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
George William (GW) Thompson, III, Director Emeritus of the Center for Major Exploration
Lenora Hicks Thompson, Senior Executive Director Emerita of Counseling Services
Sophie K. Thompson, Associate Professor Emerita of Medical Diagnostic and Translational Sciences
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
Marek Wermus, Associate Professor Emeritus of Information Technology and Decision Sciences
Debbie Harmison White, Senior Associate Athletic Director Emerita for External Relations
Frederick D. Whitehurst, Professor Emeritus of Accounting
Richard Whittecar, University Professor Emeritus and Associate Professor Emeritus of Ocean, Earth and Atmospheric Sciences
J. Christian Wild, Associate Professor Emeritus of Computer Science
Harold S. Wilson, Professor Emeritus of History
Jack H. Wilson, Professor Emeritus of English
Larry W. Wilson, Associate Professor Emeritus of Computer Science
Barbara Winstead, Professor Emerita of Psychology
Konrad Winters, Associate Professor Emeritus of Communication and Theatre Arts
Denny T. Wolfe Jr., Professor Emeritus of Educational Curriculum and Instruction
Lloyd Wolfinbarger 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
Gilbert R. Yochum, Professor Emeritus of Economics
James H. Yuan, Professor Emeritus of Chemistry and Biochemistry
Donald Zeigler, Professor Emeritus of Political Science and Geography
Dennis Zeisler, University Professor Emeritus and Professor Emeritus of Music
Michelle L. Zimmerman, Associate Professor Emerita of Nursing
Course Index

Courses of Instruction

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 are cross-listed to undergraduate 400-level courses, with additional work and higher-level outcomes required for 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, S=Writing, 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. The 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. 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 or MATH 103M, 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 or MATH 103M, 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 or MATH 103M, 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 or MATH 103M, STAT 130M or qualified to enroll in MATH 162M, and ACCT 201 or ACCT 226.

ACCT 300. Accounting for Entrepreneurs. 3 Credits.
This course is for non-accounting students who wish to start their own businesses. The course is designed to support entrepreneur activities such as: producing meaningful financial statements and management accounting reports to measure firm performance; choosing the appropriate business entity type; basic tax issues and planning in starting and running a small business; establishing an effective governance structure; and setting up an anti-fraud prevention program. Accounting majors or minors cannot use this course as an accounting elective, but can use the course as a 300-400 business elective. This course will not be used in the calculation of grade point average for an accounting major or accounting minor. Prerequisites: Completion of MATH 102M or higher, or STAT 130M, or qualified to enroll in MATH 162M or higher, and a declared major in the University or permission of the Chair's Office of the School of Accountancy.

ACCT 301. Intermediate Accounting I. 3 Credits.
This course is required for students following the accounting curriculum in the 2015-16, 2016-17, 2017-18, and 2018-19 Catalogs and should be taken only by these students. The course covers financial statement and managerial accounting information preparation for external and internal users in accordance with prevailing accounting standards established by recognized accounting bodies. Students who have not had ACCT 201 and ACCT 202 within two years of planning to enroll 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. Students in the Accounting Major Professional (AP) program or seeking acceptance in the MSA program must achieve a B- or better. 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.
This course is required for students following the accounting curriculum in the 2015-16, 2016-17, 2017-18, and 2018-19 Catalogs and should be taken only by these students. 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 major in accounting. Students in the Accounting Major Professional concentration or seeking admission to the MSA program must earn a grade of B- or better. 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 305. Essentials of Financial Accounting I. 3 Credits.
This course is the gateway to the undergraduate accounting program at Old Dominion University. It is the first of three financial accounting courses designed to strengthen the technical, communication, and critical thinking skills required to succeed in accounting-related careers. This course covers the theoretical foundation, concepts, and principles that underlie financial statement preparation. It exposes students to accounting by providing an in-depth study of the accounting cycle, income statement and balance sheet. Students gain an understanding of how financial statements are prepared using Excel, including an introduction to data analysis using Excel and authoritative sources to support an accounting position. Students gain an in-depth understanding of how these topics are presented in the financial statements and use the FASB Accounting Standards Codification to support an accounting position. Students must have a C- or better in ACCT 305 to proceed to other upper-level accounting courses. Students seeking acceptance to the MSA program must achieve a B- or better in ACCT 306. Prerequisites: ACCT 201 and ACCT 226 or ACCT 227; ACCT 305 with a C or better; and a declared major in the University or permission of the Dean's Office.

ACCT 306. Essentials of Financial Accounting II. 3 Credits.
This is the second of the three-course financial accounting series and continues the study of financial statement preparation. Selected topics include: inventories; property, plant, and equipment; investments; and current and long-term liabilities. Students gain an in-depth understanding of how these topics are presented in the financial statements and use the FASB Accounting Standards Codification to support an accounting position. Students gain an understanding of how financial statements are prepared using Excel, including an introduction to data analysis using Excel and authoritative sources to support an accounting position. Students must have a C- or better in ACCT 306 to proceed to other upper-level accounting courses. Students seeking acceptance to the MSA program must achieve a B- or better in ACCT 307. Prerequisites: ACCT 201 and ACCT 226 or ACCT 227; ACCT 305 with a C or better; and a declared major in the University or permission of the Dean's Office.

ACCT 307. Essentials of Financial Accounting III. 3 Credits.
This is the third of the three-course financial accounting series and continues the study of financial statement preparation. Selected topics include leases, pensions, accounting for income taxes, stockholders’ equity, earnings per share, the Statement of Cash Flows, and other corporate reporting issues. Students gain an in-depth understanding of how these topics are presented in the financial statements and use the FASB Accounting Standards Codification to support an accounting position. Students gain an understanding of how financial statements are prepared using Excel, including an introduction to data analysis using Excel and authoritative sources to support an accounting position. Students must have a C- or better grade in ACCT 307 to graduate with a major in accounting. Students seeking admission to the MSA program must earn a grade of B- or better in ACCT 307. Prerequisites: ACCT 201 and ACCT 202 or ACCT 226 and ACCT 227; ACCT 305 with a C or better; ACCT 306 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 is required for students following the accounting curriculum in the 2015-16, 2016-17, 2017-18, and 2018-19 Catalogs and should be taken only by these students. 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 major in accounting. Students in the Accounting Major Professional concentration or seeking admission to the MSA program must earn a grade of B- or better. Prerequisites: ACCT 201 and ACCT 202 or ACCT 226 and ACCT 227; ACCT 301 with a C or better or ACCT 305 with a C or better; and a declared major in the University or permission of the Dean's Office.

ACCT 367. Cooperative Education. 1-6 Credits.
May be repeated for credit and available for pass/fail grading only. Student participation in a professional work experience. Approval for enrollment and allowable credits are determined by the department and Career Development Services prior to the semester in which the work experience is to take place. Prerequisites: ACCT 301 with a C or better; or ACCT 305 with a C or better and ACCT 306 with a C- or better; and a declared major in the University or permission of the Dean's Office; approval of Career Development Services; 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 Career Development Services in the semester prior to enrollment. Prerequisites: ACCT 301 with a C or better; or ACCT 305 with a C or better and ACCT 306 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.

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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 Development Services in the semester prior to enrollment. Prerequisites: ACCT 301 with a C or better; or ACCT 305 with a C or better and ACCT 306 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 major in accounting. Students in the Accounting Major Professional concentration or seeking acceptance to the MSA program must achieve a B- or better in ACCT 405. Prerequisites: ACCT 301 with a C or better; or ACCT 305 with a C or better and ACCT 306 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.
Current financial auditing processes are emphasized, and Generally Accepted Accounting Principles (GAAP) are used to evaluate the fairness of financial statements. Additionally, standards and ethics of the public accounting profession, generally accepted auditing standards, and public reporting are covered. Students must have a C- or better grade in ACCT 411 to graduate with a major in accounting. Prerequisites: ACCT 305 with a C or better and ACCT 306 with a C- or better; or ACCT 301 with a C or better; Junior or Senior standing; and a declared major in the University or permission of the Dean’s Office.

ACCT 421/521. Taxation. 3 Credits.
This course is required for students following the accounting curriculum in the 2015-16, 2016-17, 2017-18, and 2018-19 Catalogs and should be taken only by these students. 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 major in accounting. Students in the Accounting Major Professional concentration or seeking admission to the MSA program must earn a grade of B- or better. 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. Tax Research. 3 Credits.
An intensive course in taxation. Focuses on the choice of business entity by covering taxation of corporations (both C and S corporations), partnerships and sole proprietorships. The course emphasizes research skills and professional ethics. Students must have a C- or better in ACCT 422 to graduate with a major in accounting. Prerequisites: ACCT 301, ACCT 302 and ACCT 421 with a C or better; or ACCT 305 with a C or better and ACCT 306, ACCT 307, ACCT 425, and ACCT 426 with a C- or better; senior standing; and a declared major in the University or permission of the Dean’s Office.

ACCT 425. Taxation of Individuals. 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 425 to graduate with a major in accounting. Students seeking admission to the MSA program must earn a grade of B- or better. This course, plus an additional self-study module and test on Blackboard, will satisfy the requirement for those whose catalog requires ACCT 421. Prerequisites: ACCT 305 with a C or better and ACCT 306 with a C- or better for accounting majors; or ACCT 301 with a C or better; or FIN 431 with a C or better, and a declared major in the University or permission of the Dean’s Office.

ACCT 426. Taxation of Business Entities. 3 Credits.
An analysis of federal income tax law and its application to business entities. Students must have a C- or better in ACCT 426 to graduate with a major in accounting. Students seeking admission to the MSA program must earn a grade of B- or better. Prerequisites: ACCT 425 with a C- or better, or ACCT 421 with a C- or better, 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 may enroll in ACCT 450 as the BSBA required International Business elective. Students must have a C- or better in ACCT 450 to graduate with a major in accounting. Students in the Accounting Major Professional concentration or seeking acceptance to the MSA program must achieve a B- or better in ACCT 450. Prerequisites: ACCT 301 with a C or better and ACCT 302 with a C- or better; or ACCT 305 with a C or better and ACCT 306 and ACCT 307 with a C- or better; 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 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.

Students will complete a comprehensive final examination on materials covered in ACCT 305, ACCT 306, ACCT 307, ACCT 311, ACCT 411, ACCT 425, ACCT 426, and ACCT 460; or ACCT 301, ACCT 302, ACCT 311, ACCT 421, and ACCT 460. Students must have a C- or better in ACCT 460 to graduate with a major in accounting. Prerequisites: IT 360T; ACCT 305 with a C or better; ACCT 306, ACCT 307, ACCT 311, ACCT 411, and ACCT 425 with a C- or better; or ACCT 301 with a C or better, ACCT 302, and ACCT 311 with a C- or better; and a declared major in the University or permission of the Dean's Office. Pre- or corequisite: ACCT 426 or ACCT 421 with a C- or better.

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; or ACCT 305 with a C or better and ACCT 306 with a C- or better; a declared major in the University or permission of the Dean's Office, and approval of the Chair of the School of Accountancy.

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. 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. 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. 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 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.

AMST 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.

AMST 495. 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 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 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 495. 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 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 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 495. 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. 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.
This is an introductory class to Modern Standard Arabic and Middle Eastern
Culture. Students are expected to reach intermediate low to intermediate
mid-level. The Arabic alphabet and sounds are introduced as well as simple
language in context reflecting the authentic cultural nuances dealing with
simple topics ranging from family, school and hobbies. No prior knowledge
is required.

ARAB 195. Topics. 1-6 Credits.
Special topics in Arabic.

ARAB 212. Intermediate Arabic. 6 Credits.
The class is a continuous sequence of ARAB 111F or an equivalent class.
The students are expected to reach intermediate high level. The class focuses
on expanding the topics of communication the students developed in the
introductory class. Modern standard and Levantine Arabic will be the means
of communication in class and the student will be exposed to practical
grammar, authentic media and texts. The students will produce culture
through role plays and group work simulations and recognize the different
registers in the targeted culture through paying attention to sociolinguistic
variations. 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.
The purpose of the class is to reinforce the vocabulary and grammar
introduced in ARAB 111F and ARAB 212 through activating the learned
materials and pushing the students to the advanced level. The language of
interaction will be Levantine and Standard Arabic, which students will be
able to manipulate to the specific language situations as in the countries this
deglosic phenomenon exists. In addition to the grammar and vocabulary
introduced in the textbook, the class will incorporate an extensive authentic
reading component and a variety of Arabic contemporary media to reflect
the linguistic and cultural aspects of the Middle East. Prerequisites:
ARAB 212.

ARAB 312. Advanced Arabic Language and Culture II. 3 Credits.
The class is a continuous sequence of ARAB 311 or an equivalent class.
Students are expected to reach advanced low level and explore the Middle
Eastern cultures through the language spoken there. Levantine and Standard
Arabic are the only means of communication in this class. The class
incorporates a high load of writing to express students’ ideas relating to a
wide variety of Middle Eastern topics and current events, which will be
introduced through weekly readings and authentic media. This is a crucial
class for students planning to travel to the Middle East, who want to explore
the Arab world first hand. Prerequisites: ARAB 311.
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 150. Global Survey of Art History. 3 Credits.
This course provides an opportunity to discover, appreciate, and acquire broad knowledge of art history through the ages, from the Prehistoric era to contemporary times within a global perspective. Students will learn to examine and critically analyze major forms of artistic expression from diverse cultures and periods of art in order to understand their individual and collective contributions to the arts.

ARTH 195. Topics. 1-3 Credits.
Special topics in art history.

ARTH 203. Ancient Art. 3 Credits.
This course covers the art and architecture of the ancient world from its Paleolithic origins to the end of antiquity and the birth of Christian art. Ranging from drawings in caves to mosaics in churches, the material addressed in the course is situated in its social, political, and historical context. The objective of this course is to provide a visual and cultural literacy of ancient art and to familiarize students with the methods, theories, and traditions upon which ancient art history is grounded. Prerequisite: ENGL 211C or ENGL 221C or ENGL 231C or permission of instructor.

ARTH 210. Early Modern Art in Europe. 3 Credits.
“Early Modern” is a relatively new term applied to a broad period of artistic production in Europe that encompasses distinct, yet overlapping, style periods, which include the “Renaissance,” “Baroque,” “Rococo,” and “Neoclassicism.” This course will examine painting, sculpture, architecture, and graphic arts in Europe from 1400—1800 within the context of artistic creativity in relationship with intellectual, religious, economic, political, scientific, and cultural changes and developments in the Western world. Prerequisites: ENGL 211C or ENGL 221C or ENGL 231C or permission of instructor.

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 215. Baroque Art in Europe. 3 Credits.
A survey of the art and architecture of the Baroque in Europe. The objective of this course is to provide a basis for the recognition of Baroque art in Europe (primarily Italy, Spain, Netherlands, and France), techniques and stylistic devices utilized by its practitioners, and a broad understanding of the contribution of historical and cultural stimuli on style within a framework of critical analysis. Prerequisite: ENGL 211C or ENGL 221C or ENGL 231C.

ARTH 224. Nineteenth Century European Art. 3 Credits.
An overview of nineteenth century art primarily focused on Europe, but with reference to non-European art as it influenced and affected western trends. The class will focus on the conflicts, motives, social trends and individual personalities that informed major artistic movements, including Neoclassicism, Romanticism, Realism, Impressionism, Post-Impressionism, Aestheticism, and Symbolism. Prerequisite: ENGL 211C or ENGL 221C or ENGL 231C.

ARTH 230. Twentieth Century Modern Art. 3 Credits.
A survey of modern and contemporary art with respect to its theoretical grounding and diverse practices, including critical discussions of the concepts of modernism and postmodernism as they are and have been practiced. Students will also receive instruction and experience in research and writing within the discipline of art history. Prerequisites: ENGL 211C or ENGL 221C or ENGL 231C or permission of instructor.

ARTH 295. Topics. 3 Credits.
Topics in art history.

ARTH 301. 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 212 or ARTH 203 or ARTH 210 or ARTH 230 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 121A or ARTH 203 or ARTH 210 or ARTH 230 or 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 121A or ARTH 203 or ARTH 210 or ARTH 230 or 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, Josepe de Ribera, and Francisco de Zurbaran, among others. Prerequisites: ARTH 211 or permission by instructor. Pre- or corequisites: ARTH 212 or permission by instructor.
AR TH 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 Graphic Design. 3 Credits.
A critical study of the formal, cultural, and intellectual developments of the graphic design discipline, including related activity in fine art, illustration, and industrial design. This is a writing intensive course. Prerequisites: Grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

ARTH 321. History of Decorative Arts. 3 Credits.
Examines the major historical developments in the decorative and applied arts, landscape design, and material culture from the Renaissance to the Modern period. Prerequisites: ARTH 211 AND ARTH 212.

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 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 339. Surrealism and other Utopias. 3 Credits.
A study of the international movements in visual arts and design in the interwar years from Dada to the New World's Fair. Prerequisite: ARTH 212 or permission of instructor.

ARTH 340. Abstract Expressionism and its Discontents. 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 or permission by 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. Prerequisite: ARTH 121A or ARTH 203 or ARTH 210 or ARTH 230 or ARTH 212 or permission of instructor.

ARTH 365. Problems in Postmodernism. 3 Credits.
Lectures and critical discussion of the development and configurations of the various styles emergent since 1960, both in America and Europe. Prerequisite: ARTH 212 or permission of the 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. Prerequisites: Approval of the program director and Career Development Services.

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. 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. 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 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, ARTH 203, ARTH 210, ARTH 230, or ARTH 212 or permission of the instructor; grade of C or better required in ENGL 211C or ENGL 221C or ENGL 231C.

ARTH 450/550. Public Art. 3 Credits.
This course is a collaborative exploration of the problems and opportunities of national and international public art that combines the practical with the theoretical, and the studio with the art-historical. Prerequisite: ARTH 121A or ARTH 212.

ARTH 435W/535. Modern Architecture. 3 Credits.
A seminar in advanced practices in art history that includes topical and theoretical, and the studio with the art-historical. Prerequisite: ARTH 121A or ARTH 212.

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 481. Capstone. 3 Credits.
A seminar in advanced practices in art history that includes topical and theoretical readings. Students will refine and present a paper to the class according to professional standards. Prerequisite: Approval of the program director.
ARTS 231. Drawing I: Fundamentals of Drawing
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.

ARTS 236. Drawing II: Figurative Techniques
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.

ARTS 247. Drawing III: Advanced Drawing
Independent research on a topic to be selected under the guidance of the instructor. Prerequisites: Permission of the instructor.

ARTS 248. Tutorial Work in Drawing
Independent research on a topic to be selected under the guidance of the instructor. Prerequisites: Permission of the instructor.

ARTS - Art, Studio

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 and Color Theory. 3 Credits.
An introduction to pictorial design via an intensive study of the elements and principles of art and design and Gestalt Theory. These fundamental ideas are reinforced as color theory principles are introduced, such as: additive and subtractive color systems, color interaction, and harmonies as well as the phenomenon of simultaneous contrast.

ARTS 203. Three-Dimensional Design. 3 Credits.
A basic course examining the relation of form and structure in a three-dimensional environment.

ARTS 204. Foundational Concepts in Studio Art. 3 Credits.
This course provides students an overview of the options, methods, and strategies by which modern and contemporary artists operate. One of the primary learning outcomes is for students to be conversant with the discourse and ideas that they have inherited as artists, designers, and scholars in the 21st century in order to enrich their own creative practices.

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 212. Darkroom Photography. 3 Credits.
This is an introductory darkroom course that will focus on alternative as well as conventional techniques of the black and white darkroom. The class will approach image making with a focus on experimentation. Techniques covered will include photograms, pinhole photography, Van Dyke brown and gelatin silver prints. In addition to production of images, an early history of photography, beginning with the camera obscura, will be discussed. Class sessions will be divided into lecture/slide presentations, critique of students' work, demonstrations, and open lab time. Students will create a final portfolio to be reviewed as a class at the end of the semester. Prerequisite: ARTS 211 or permission of the instructor.

ARTS 231. Drawing I: Fundamentals of Drawing. 3 Credits.
An intensive studio course that fosters observational and visualization skills through a comprehensive exploration of composition, linear perspective, and sighting and measuring techniques. These principles are executed by utilizing line and value with a variety of media including graphite, charcoal, and ink. Investigations of the discipline's historic and contemporary dimensions support the course objectives.

ARTS 241. Painting I. 3 Credits.
An observational painting course that serves as an introduction to the fundamental concepts and competencies of oil painting. Primary emphasis is on composition, accuracy of color mixing, description of form and space as well as paint application techniques. Prerequisite: ARTS 202 and 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 257. Print I: Intaglio and Relief. 3 Credits.
A basic introduction to the aesthetic and conceptual possibilities of print media, focusing primarily on Intaglio and Relief printing techniques. Studio projects and demonstrations will be supplemented with lectures and readings exploring the significance of print to contemporary artists. Prerequisites: ARTS 202 and ARTS 231.

ARTS 258. Print I: Screenprint and Lithography. 3 Credits.
A basic introduction to the aesthetic and conceptual possibilities of print media, focusing primarily on Screenprinting and Lithography. Studio projects and demonstrations will be supplemented with lectures and readings exploring the significance of print to contemporary artists. Prerequisites: ARTS 202 and ARTS 231.

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. Prerequisite: 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 and ARTS 203.

ARTS 279. Digital Basics. 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. Weaving and Fibers: Introduction. 3 Credits.
An introduction to various looms, tools, materials and techniques used in weaving and fabric dyeing; individual design projects. Prerequisites: ARTS 202 and ARTS 203.

ARTS 291. Art as Experience. 3 Credits.
A basic introduction to the aesthetic and conceptual possibilities of print media, focusing primarily on Screenprinting and Lithography. Studio projects and demonstrations will be supplemented with lectures and readings exploring the significance of print to contemporary artists. Prerequisites: ARTS 202 and ARTS 231.

ARTS 297. 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.

ARTS 298. 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.
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: ARTS 231 or permission of the instructor.

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 312. Lighting for Photography. 3 Credits.
This class explores controlled lighting for photography both inside and outside the studio. Emphasis is placed on exploring photographic concepts and the creative application of lighting technique and style both inside the studio and on location. Students will also investigate ways to communicate ideas through strong photographic imagery and how photography shapes and influences society through class readings and discussion. Prerequisite: ARTS 211 or permission of the instructor.

ARTS 331. Drawing II. 3 Credits.
This is an intensive studio course that builds on the perceptual and technical skills developed in ARTS 231. Using a variety of media including ink, charcoal, graphite, and chalk pastels, initial coursework will act as a review of direct observational drawing skills with an introduction to the formal optics of color perception and interaction through the framework of drawing. Students will begin exploring the expressive potential of drawing through thematically-driven projects during the second half of the semester. Prerequisites: ARTS 231 and ARTS 202.

ARTS 341. Painting II. 3 Credits.
An intensive studio course that builds on the perceptual and technical skills developed in ARTS 241. Coursework includes a review and expansion of direct observational painting skills with exploration into the expressive potential of painting through thematically-driven projects. Prerequisites: ARTS 241 and ARTS 331.

ARTS 343. Techniques in Abstraction. 3 Credits.
This course serves to expose students to various techniques in contemporary abstraction. Students explore a range of strategies for producing both objective and non-objective abstract work using drawing and/or painting media. Prerequisite: ARTS 341.

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 254, ARTS 257, ARTS 258, or ARTS 259).

ARTS 351. Print II: The Hybrid Print. 3 Credits.
Students investigate the integration of traditional print media with digital prints, photographic techniques, and rapid prototyping technologies. Readings and discussions will explore the relationship between analog and digital media. Students choose a conceptual theme that will guide their work throughout the semester. Prerequisite: ARTS 257, ARTS 258 or ARTS 259 or permission of the instructor.

ARTS 352. Print II: Medium Intensive. 3 Credits.
Students focus on a single print medium from Print I (Intaglio, Relief, Screenprint, Lithography, or Letterpress) for intensive study. Use of color, registration, and alternative techniques will be emphasized within a given medium. Students choose a conceptual theme that will guide their work throughout the semester. Prerequisite: ARTS 257, ARTS 258 or ARTS 259 or permission of the instructor.

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 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. Prerequisites: approval by the department chair and Career Development Services 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 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. Weaving and Fibers: Intermediate. 3 Credits.
An introduction to pattern drafting, advanced loom technique, off-loom weaving, and fabric painting. Prerequisites: ARTS 281.

ARTS 391. Metalsmithing and Jewelry: Intermediate. 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 393. Alternative Jewelry. 3 Credits.
Utilizing technology, alternative materials and alternative scale simultaneously with traditional techniques and processes, students will explore adornment beyond the typical, mainstream conception of 'jewelry.' Students will conduct research into the purposes and cultural connections that jewelry holds in society. There will be emphasis on the importance of concept, design and material when producing work. Prerequisite: ARTS 291 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.
This is the capstone class for all students in the BFA program (except students in the graphic design concentration take ARTS 401). Focusing on the development and articulation of aesthetic vision and studio practice, students will identify key ideas and sources for their work. They will also clarify their methods and concepts to create a finished, exhibition quality project. The class also addresses professional installation, promotion, and documentation of finished work, culminating with an exhibition. Prerequisite: Students must be in the final semester of major concentration.

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. Prerequisites: ARTS 305 and TLED 301.

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. Corequisite: ARTS 408. Prerequisite: Passing score on the Praxis Core examination 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. Prerequisite: Passing score on the Praxis Core examination 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 and Drawing. 3 Credits.
An intensive studio course that builds upon skills developed in ARTS 331 and ARTS 341. Students pursue various approaches to the development of pictorial space and investigate the connection between formal decision making, media use, and individual expression within their work. Prerequisites: ARTS 341.

ARTS 442/542. Painting and Drawing Studio. 3 Credits.
Students develop an individual body of work exploring preferred concepts, subject matter, techniques, and media in close consultation with faculty. Written proposal by students required at registration. Prerequisites: ARTS 441 and ARTS 445.

ARTS 445. Hybrid Approaches to Painting and Drawing. 3 Credits.
This course emphasizes hybrid approaches to contemporary drawing and painting including the integration of digital processes into studio practice and production. Students will be introduced to various applications and techniques regularly used in contemporary painting and drawing, including generating digital imagery, diorama construction and image compositing. Traditional and nontraditional media and subjects may be used to assist in the fulfillment of students’ analytical and expressive intentions. Prerequisites: ARTS 341.

ARTS 450/550. Printmaking III. 3 Credits.
Students create a body of personal work based on their research and interests. Readings, discussion, and presentations situate students’ practice within contemporary print discourses. Prerequisite: ARTS 351 or ARTS 352 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 456. 2D Seminar. 3 Credits.
This course covers both theoretical and practical concerns within contemporary 2D art (painting, drawing, print. A combination of reading, writing, and critique develop and deepen the trajectory of students' creative practice. Prerequisite: ARTS 450 or ARTS 441 or permission of the instructor.

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 472/572. Art Therapy. 3 Credits.
This class is designed to initiate students from both studio art and non-studio backgrounds to the study of art therapy. It examines the history of art therapy in the United States, introduces the Expressive Therapies Continuum (ETC), and explores the application of art therapy techniques and their underlying rationales. Prerequisite: Instructor permission required.
ARTS 492. Wood Studio/Furniture Design
Forms and techniques of raising and forging. Additional introduction to the
production techniques in casting and soldering with concentration in the metal-
forming techniques of casting and forging. Additional introduction to the
contact and forging. Additional introduction to the
techniques of working in steel. Prerequisites: ARTS 391.

ARTS 493/593. Metalsmithing Studio. 3 Credits.
An exploration of concepts and techniques in wood sculpture and furniture
design and fabrication. Prerequisite: Junior standing.

ARTS 494/594. Metalsmithing and Jewelry: Advanced. 3 Credits.
This course offers further exploration and concentration on metalsmithing
skills and techniques. Through readings, discussions, self-directed and self-
determined projects, students will explore methods and content to develop
individual body of work. May be repeated for credit once. Prerequisite:
ARTS 391 or ARTS 392 or ARTS 393.

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 Daoism. 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 203 or ARTH 210 or
ARTH 230 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 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.

BDA - Big Data Analytics

BIG DATA ANALYTICS Courses

BDA 411/511. Introduction to Machine Learning I. 3 Credits.
An introductory course on machine learning. Machine Learning is the
science of discovering pattern and structure and making predictions in
data sets. It lies at the interface of mathematics, statistics and computer
science. The course gives an elementary summary of modern machine
learning tools. Topics include regression, decision trees, artificial neural
networks, genetic algorithms, clustering, dimension-reduction, learning sets
of rules, support vector machines, hidden Markov models, and Bayesian
learning. The course will also discuss applications of machine learning
that include data mining, bioinformatics, speech recognition, and text and
web data processing. Students enrolled are expected to have some ability
to write computer programs, some knowledge of probability, statistics and
linear algebra. Prerequisites: MATH 312, MATH 316, and STAT 330 or
STAT 331.
BIOE - Bioelectrics

BIOELECTRICS Courses

BIOE 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, and 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 and MATH 200 or higher.

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 students pursuing elementary education degrees because it 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 BIOL 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. Pre- or 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 + 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 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 113N + BIOL 114N satisfy four credits of the University's Nature of Science general education requirement. Pre- or corequisite: BIOL 114N.

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. Pre- or corequisite: BIOL 118N.

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. Pre- or corequisite: BIOL 117N.
BIOL 121N. General Biology I. 3 Credits.
An introduction to the process of science, biological molecules, cell biology, metabolism, molecular biology, and Mendelian genetics. Students required to take BIOL 121N cannot earn credit for BIOL 105N, BIOL 106N, BIOL 110N, BIOL 112N, or BIOL 117N. Prerequisites: Placement into ENGL 110C. Pre- or corequisite: BIOL 122N and 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. Students required to take BIOL 122N cannot earn credit for BIOL 111N, BIOL 113N, or BIOL 118N. Prerequisites: Placement into ENGL 110C. Pre- or corequisite: BIOL 121N and 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. Students required to take BIOL 123N cannot earn credit for BIOL 105N, BIOL 106N, BIOL 110N, BIOL 112N, or BIOL 117N. 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 BIOL 121N passed with a grade of C (2.0) or higher. Pre- or corequisite: BIOL 124N.

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. Students required to take BIOL 124N cannot earn credit for BIOL 111N, BIOL 113N, or BIOL 118N. 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. Pre- or corequisite: BIOL 123N.

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. Students required to take BIOL 136N cannot earn credit for BIOL 105N, BIOL 106N, BIOL 110N, BIOL 112N, or BIOL 117N. 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 BIOL 121N. Pre- or corequisite: BIOL 123N.

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. Students required to take BIOL 137N cannot earn credit for BIOL 111N, BIOL 113N, or BIOL 118N. 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. Pre- or corequisite: BIOL 137N and MATH 102M or higher.

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. Students required to take BIOL 138N cannot earn credit for BIOL 105N, BIOL 106N, BIOL 110N, BIOL 112N, or BIOL 117N. 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. Pre- or corequisite: BIOL 139N.

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. Students required to take BIOL 139N cannot earn credit for BIOL 111N, BIOL 113N, or BIOL 118N. 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. Pre- or corequisite: BIOL 138N.

BIOL 195. Biology Lab Topics. 1-3 Credits.
Laboratory topics.

BIOL 196. Topics. 1-3 Credits.
Topics in Biology.

BIOL 240. Fundamentals of Anatomy and Physiology I. 4 Credits.
This is the first of a two-part course that investigates the structure and function of the human body. Emphasis is on the basic organization of the body, biochemical composition, cellular structure, function, tissues and organs of the following systems: integumentary, skeletal, muscular, nervous, sensory and endocrine. In lab, students will study the interrelationship between structure and function of the human body using models, histological preparations, and human and feline anatomical specimens. Students with credit for BIOL 240 cannot receive credit for BIOL 250.

BIOL 241. Fundamentals of Anatomy and Physiology II. 4 Credits.
The second of a two-part course that investigates the structure and function of the human body. Emphasis is on the basic organization of the body, biochemical composition, cellular structure, function, tissues and organs of the following systems: cardiovascular, lymphatic, immune, respiratory, urinary, digestive, reproductive and human development. In lab, students will study the interrelationship between structure and function of the human body using models, histological preparations, and human and feline anatomical specimens. Students with credit for BIOL 241 cannot receive credit for BIOL 251. Prerequisites: BIOL 240 or permission of the instructor.

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. Students with credit for BIOL 250 cannot receive credit for BIOL 240.

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 BIOL 251 (4 credits) may count toward upper-division elective requirements for the Biology major. Students with credit for BIOL 251 cannot receive credit for BIOL 241. Prerequisites: BIOL 250 or permission of the instructor.

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 and aquatic environments. Prerequisites: BIOL 123N and BIOL 124N or BIOL 138N and BIOL 139N 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 and aquatic environments. Prerequisites: BIOL 123N and BIOL 124N or BIOL 138N and BIOL 139N 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 123N and BIOL 124N or BIOL 138N and BIOL 139N must be passed with a grade of C or higher.

BIOL 300. Fundamental Biomolecules. 3 Credits.
This course provides a detailed understanding of the four major classes of organic biological molecules as well as inorganic biological molecules (vitamins and trace minerals). The course focuses on how these biomolecules relate to everyday life for a diversity of organisms. This course will additionally emphasize current research and topics in the media as they pertain to biomolecules. This course counts as an elective for BIOL majors; students with premedical, dental or veterinary emphasis should consider if this course will satisfy requirements for medical, dental, or veterinary schools. Prerequisites: BIOL 123N or BIOL 138N or BIOL 251 with a C or better and CHEM 107N or CHEM 123N or CHEM 137N or CHEM 173T with a C or better.

BIOL 302. Introduction to Immunology. 3 Credits.
A review of the phenomena of immune resistance, the cells and tissues involved in immune responses and the consequences of immunization. Prerequisite: BIOL 293.
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 121N and BIOL 124N or BIOL 138N and BIOL 139N must be passed with a grade of C or higher.

BIOL 304. Animal Nutrition. 3 Credits.
The course incorporates the fields of animal physiology, biochemistry, ecology and behavior to provide a comprehensive framework for energy acquisition, processing, and use in animals. The course content integrates cellular and molecular mechanisms of digestion and absorption, with tissue-specific and whole-animal metabolism, to the environmental influences on food resource availability and the diverse adaptations of animals to specific dietary and energetic constraints. The course primarily focuses on vertebrate animals. Prerequisites: BIOL 123N and BIOL 124N. Pre-or corequisite: BIOL 305.

BIOL 305. Animal Nutrition Laboratory. 2 Credits.
This course in comparative animal nutrition and metabolism explores how diverse animals accomplish the universal task of acquiring food energy from their environments, processing and assimilating these resources, and use food energy in metabolism to support vital functions (e.g. growth, repair, reproduction). Prerequisites: BIOL 123N and BIOL 124N. Pre-or corequisite: BIOL 304.

BIOL 306. Human Genetics. 3 Credits.
Human genetics applies the principles of genetics to understanding human disease and evolution. It covers classical genetics, molecular genetics and population genetics, meeting the undergraduate genetics requirement for biology and biochemistry majors. Prerequisites: BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N or the equivalent with a grade of C (2.0) or better. Pre-or corequisite: CHEM 441.

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 309. Foundations of Pathophysiology. 4 Credits.
This course is designed to teach the fundamentals of abnormal functions essential to understanding diseases, disease processes, and production of signs and symptoms. Chemical, biological, and biochemical alterations in physiology of all major organ systems will be considered. Prerequisites: BIOL 240/BIOL 241 OR BIOL 250/BIOL 251.

BIOL 310. Field Invertebrate Zoology. 5 Credits.
An examination of the invertebrate phyla with emphasis on classification, morphology, phylogeny, and general biology. This course will be taught as a full, immersive, field course in the Florida Keys. Prerequisite: BIOL 292 must be passed with a grade of C or higher.

BIOL 311. Global Change Biology. 3 Credits.
This course will emphasize the application of evolutionary and ecological principles such as species geographic range shifts, changes in phenotype, acclimation, adaptation, and extinction in response to global environmental changes. Prerequisites: BIOL 291 and BIOL 292 must be passed with a grade of “C” or higher.

BIOL 313. Introduction to Neuroanatomy. 4 Credits.
This course is designed to give students a comprehensive understanding of the structure and function of the human nervous system, with a major focus on neuroanatomy. The basic principles of cellular neuroscience, neurophysiology, as well as, the sensory and motor pathways will be discussed in detail. Clinically relevant applications will be discussed when relevant. The laboratory component of this course will use cadavers and human tissue to study head and neck structures. Prerequisites: BIOL 241 or BIOL 251 and BIOL 293 must be passed with a C (2.0) or better.

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. Laboratories will emphasize the morphological features of the developing vertebrate embryo. Prerequisites: BIOL 240 or BIOL 250 and BIOL 241 or BIOL 251 must be passed with a grade of C or higher. Pre-or corequisite: CHEM 211.

BIOL 316. General Microbiology. 3 Credits.
This lecture course is a general survey of the nature and diversity of microorganisms, especially bacteria but including viruses and fungi, the roles and functions of microorganisms and basic microbiological research. Prerequisites: BIOL 293 and BIOL 303 must be passed with a grade of C or higher. Pre-or corequisite: BIOL 317.

BIOL 317. General Microbiology Laboratory. 2 Credits.
Laboratory course emphasizing basic techniques in microbiology. Prerequisites: BIOL 293 and BIOL 303 must be passed with a grade of C or higher. Pre-or corequisite: BIOL 316.

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 291 must be passed with a grade of C (2.0) or higher.

BIOL 334. Field Ethnobotany. 4 Credits.
Identification, ecology, and uses of plants and mushrooms for food, oils, dyes, and cordage, based on collection and preparation of local materials. A field-intensive course with hands-on experience. A class project and presentation are required. Prerequisites: BIOL 292 AND BIOL 308 must be passed with a grade of C or higher.

BIOL 336. Vertebrate Zoology. 4 Credits.
This course will emphasize the organisms classified as vertebrates - fish, amphibians, reptiles, birds, and mammals - in addition to their evolutionary relatives. Detailed discussions of the changes that accompany this diversification of life will include topics in evolution, comparative anatomy, geology, and taxonomy. The lab will be a survey of specimens representing the major groups discussed in lecture. Prerequisites: BIOL 291 and BIOL 292 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 291 must be passed with a grade of C (2.0) or higher.

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 123N and BIOL 124N must be passed with a grade of C (2.0) or higher.

BIOL 350. Phage Discovery and Genomics I. 4 Credits.
This course is the first semester of a two-semester laboratory and scientific writing course designed to provide a unique undergraduate research experience. It 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. Prerequisite: BIOL 303.
BIOL 303. Phage Discovery and Genomics II. 3 Credits.
This is the second course of a two semester laboratory and scientific writing sequence that is designed to provide a unique research experience for undergraduate students. The second semester course is a continuation of the research on the phage project that was started in Phage Discovery and Genomics I (BIOL 350). The students will analyze the newly sequenced bacteriophage genome using bioinformatics tools with an emphasis on Genomics. The bioinformatics will be completed using computer software, mathematical modeling and presented in formal scientific laboratory reports and formal presentations. Upon successful completion of the year-long course, some students will be invited to participate in the SEA-PHAGE program coordinated by the Howard Hughes Medical Institute. The course is designed with an emphasis on independent research that could lead to a scientific publication. Prerequisites: BIOL 350 and BIOL 303 must be passed with a grade of “C” or higher.

BIOL 355. Stem Cell Biology. 3 Credits.
Tissue homeostasis requires the birth of new cells, typically derived from stem cells, as well as the removal of cells that are not needed or have become damaged. This course will focus on understanding the mechanisms by which new cells are generated and old or diseased cells are removed. The pathological consequences of failures in one or both of these key processes will be explored as well. Applications of stem cells to regenerative medicine will be considered in detail. Prerequisites: A grade of “C” or higher in BIOL 293.

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. Prerequisites: approval by the department chair and Cooperative Education/Career Development Services.

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. Prerequisites: BIOL 123N and BIOL 124N must be passed with a grade of C (2.0) 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. Prerequisites: BIOL 123N and BIOL 124N must be passed with a grade of C (2.0) 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 380. Research in Pathogen Biology I: Laboratory Investigation. 4 Credits.
This is the first course of a two-semester laboratory and analysis sequence that is designed to provide a genuine research experience for undergraduate students. Students will design a novel research question in pathogen biology, then use modern laboratory techniques such as polymerase chain reaction and next-generation DNA sequencing to examine this question and test hypotheses. Data generated in this course will be analyzed in the second course in the series, BIOL 381. Data and analyses generated during these courses may be used for publication in scientific journals. Prerequisites: BIOL 303.

BIOL 381. Research in Pathogen Biology II: Analysis. 4 Credits.
This is the second course of a two-semester laboratory and analysis sequence that is designed to provide a genuine research experience for undergraduate students. In this semester, students will analyze data generated during the previous semester in BIOL 380. Modern methods of data analysis will be used, including statistical and bioinformatics techniques. Data and analyses generated during these courses may be used for publication in scientific journals. Prerequisite: BIOL 303; BIOL 380 preferred.

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 123N and BIOL 124N must be passed with a grade of C or higher.

BIOL 396. Topics in Biological Sciences. 4-5 Credits.
A structured specialty course for students at the junior level. Courses may include lecture and laboratory components. Prerequisites: BIOL 123N and BIOL 124N with grades of C or better.

BIOL 400/500. Vascular Plant Families. 5 Credits.
An evolutionary survey of vascular plant families and the principles and methodologies that define them; emphasis is placed on recognition and skills of identification. A field intensive hands-on course. A research project including a written paper and presentation is required. Prerequisites: BIOL 292 and BIOL 308 with a C or better.

BIOL 401W/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. Writing skills will be learned through written summaries, essay exams, laboratory reports and research proposals. This is a writing intensive course. Prerequisites: BIOL 291 and BIOL 292 must be passed with a grade of C (2.0) or higher.

BIOL 402/502. Scientific Diving Methods for Marine Research. 4 Credits.
This lecture/field experience course will train students in the common techniques used by marine scientists who employ scuba for their research. It satisfies the requirements for an American Academy of Underwater Scientist certification and covers other topics such as: use of underwater research equipment and marine resource surveys. A multi-day scuba trip is required. Prerequisites: junior standing and scuba diving certification.

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 240 or BIOL 250, BIOL 316 and BIOL 317, 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 407/507. The Pharmacology and Neurobiology of How Recreational Drugs Work. 3 Credits.
This course in drug use and abuse is designed to distinguish between drug use and drug abuse as well as provide pharmacological knowledge of how recreational drugs work. Students will acquire knowledge regarding the abuse of prescription drugs, depressants, stimulants, hallucinogens, marijuana and inhalants. This information will be used to analyze pathophysiological conditions that can occur as a result of drug use and abuse. Prerequisite: BIOL 293 or equivalent. Pre- or corequisite: BIOL 408 recommended.

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. Prerequisite: course background in cell biology and/or human physiology.

BIOL 411/511. Zymology: Fermentation Science. 4 Credits.
This is an introductory course in the theory and practice of zymology (fermentation). Edible and potable products of fermentation (beer, wine, mead, yogurt, cheese) have been known since antiquity and play an important role in today’s society. The science of fermentation touches on many biological disciplines, such as microbiology and biochemistry, and the study of yeasts has provided considerable foundation to the fields of cell biology and molecular biology. In this course, we will cover fundamentals of fermentation and its practical application to production of beer, one of the oldest beverages produced by humans. Prerequisite: BIOL 293.

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 415W/515. Marine Ecology. 5 Credits.
A lecture and laboratory course designed to introduce students to important ecological processes operating in coastal marine environments; this is a writing-intensive course. The course covers synthetic topics as well as the ecology of specific marine habitats. The laboratory is designed to provide students with experience in marine research and the organisms and ecological conditions common in various marine habitats visited by the class. A field trip of several days over fall break is required. Prerequisites: BIOL 291 and BIOL 331 or ENGL 221C or ENGL 231C must be passed with a grade of "C" or higher; instructor approval required.

BIOL 416/516. Clinical Immunology. 3 Credits.
A description of common immunological problems seen in the clinic. Prerequisites: BIOL 302.

BIOL 419/519. Wetland Plants. 5 Credits.
A field-oriented course on 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 to develop identification skills using plants from the diversity of habitats in the region. 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 423W/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. This is a writing intensive course. Prerequisites: BIOL 293, BIOL 303, and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

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 240 or BIOL 250 and BIOL 293 must be passed with a grade of C or higher.

BIOL 430W/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. This is a writing intensive course. Prerequisites: BIOL 316 and BIOL 317 and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

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 course will focus on concepts related to the spread and control of infectious diseases. This course is 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 or MATH 205, 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 437W/537. One Health: People, Animals and the Environment. 3 Credits.
A course that examines the interdependence between human health, animal health and environmental health. The One Health approach to the threat of emerging infectious diseases includes understanding the interconnectedness of human and animal pathogens, epidemic zoonoses and corresponding environmental factors, insights into mechanisms of microbial evolution towards pathogenicity, new technologies and approaches towards disease surveillance, and political and bureaucratic strategies. This is a writing intensive course. Prerequisites: BIOL 291 and BIOL 293. Pre- or corequisite: BIOL 292 and BIOL 303; a Microbiology course is recommended.

BIOL 438/538. The Biology of Woody Plants. 4 Credits.
The study of trees and shrubs (dendrology), 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 440/540. Methods in Immunological Research. 4 Credits.
The major objective of this hands-on course is to use basic laboratory techniques to prepare monoclonal antibodies to use for identification and characterization of mouse immune cells. Students will learn basic training in molecular and cellular biology techniques aiming at building basic knowledge in flow cytometry, from the experimental designs to data acquisition and analysis. The course will cover: instrumentation; sample preparation; data analysis; and applications in immunology. Prerequisites: BIOL 123N and BIOL 124N.

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 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 451/551. Bioinformatics and Genomics I. 4 Credits.
The application of computer science to biology has led to major breakthroughs in the ability to read and understand the code written in genomes. This course will give students the skills to participate in the computational revolution in biology. The course will give students hands-on experience in writing simple yet powerful computer programs in the Python programming language and making beautiful data visualizations in the R programming language. Students will also learn how to combine existing pieces of bioinformatics software for their own workflows. Prerequisites: BIOL 123N and BIOL 124N must be passed with a grade of C (2.0) or higher, junior standing, and permission of the instructor.

BIOL 452/552. Bioinformatics and Genomics II. 4 Credits.
The application of computer science to biology has led to major breakthroughs in the ability to read and understand the code written in genomes. This course will give students the skills to participate in the computational revolution in biology. The course will build on the knowledge of writing programs. Students will learn about some key techniques “under the hood” of software that have been critical to the genomics revolution. Topics will include: graph algorithms, evolutionary trees, probability models for DNA and protein sequences, and an introduction to deep learning in biology. Prerequisites: Knowledge of Python programming and permission of instructor, or BIOL 451 must be passed with a grade of C (2.0) or higher.

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 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. 5 Credits.
Students will dissect a human cadaver fully and learn all of the major structures. The course will be divided into three sections: back and limbs, TAP (thorax, abdomen and pelvis), and head and neck. Instructor demonstrations include brain removal and dissection. Prerequisites: BIOL 241 or BIOL 251, or its equivalent, must be passed with a grade of C (2.0) 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 316 and BIOL 317 must be passed with a grade of C (2.0) or higher.

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 465/565. Biotechnology. 3 Credits.
This course provides an overview of how microbes are manipulated to solve practical problems through biotechnology. Topics include basic concepts in microbial technology, industrial microbiology, microbes in drug development, food microbiology, microbial interactions, gut microbiota, and metagenomics. Prerequisites: BIOL 316 and BIOL 317 must be passed with a grade of C or higher or permission of instructor.

BIOL 466W/566. Introduction to Mitigation and Adaptation Studies. 3 Credits.
Students will be introduced to the science underpinning mitigation of human-induced changes in the Earth system, including but not limited to climate change and sea level rise, and adaptation to the impacts of these changes. The course will cover the environmental hazards and the opportunities and limitations for conservation, mitigation and adaptation. This is a writing intensive course. Cross listed with IDS 466W and OEAS 466W. Prerequisites: BIOL 291 or permission of instructor.

BIOL 467/567. Sustainability Leadership. 3 Credits.
In this class, students will discover what makes a leader for sustainability. They will consider a range of global and local crises from a leadership point of view in the context of sustainability science, which addresses the development of communities in a rapidly changing social, economic, and environmental system-of-systems environment. The course will be based on taking a problem-motivated and solution-focused approach to the challenges considered. The course includes a service learning project focusing on a leadership experience in solving a real-world environmental problem. Prerequisite: BIOL 466W or OEAS 466W or IDS 466W.

BIOL 468W. Research Methods in Mathematics and Science. 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 scientific results. Students will perform four independent inquiries, combining skills from mathematics and science to solve research problems. Required for Biology teaching licensure track; not available as upper-division elective in content area. This is a writing intensive course. Prerequisites: BIOL 307 or BIOL 308 or BIOL 316 and BIOL 317 or MATH 212 and ENGL 211C or ENGL 221C or ENGL 231C and STEM 201 must be passed with a grade of C or higher or permission of instructor, and admission to Monarch Teach.

BIOL 470T/570. Diseases that Changed our World. 3 Credits.
Despite advancements in the development of antimicrobials and vaccines and in securing clear water and food supplies, modern civilizations are not immune to epidemic diseases. This course will provide insight into the role of different technologies in the struggle to attain disease control and eradication and explore the challenge of forecasting emerging plagues, describing the nature and evolution of diseases and conveying their significance in shaping Western culture and civilization, their impact, their consequences, their costs, and the lessons learned. Prerequisites: BIOL 291 and BIOL 293 must be passed with a grade of "C" or higher.

BIOL 471W/571. Marine Vertebrate Ecology, Management & Conservation. 3 Credits.
Course will explore the biology, diversity and major life history patterns of a suite of marine megafauna, including sea turtles, marine mammals, seabirds and sharks. Students will determine the major drivers behind large-scale declines of many marine megafauna species and be challenged to understand and attempt to solve conservation and management issues. This is a writing intensive course, with a focus on the content and mechanics of scientific writing. Prerequisites: BIOL 291, BIOL 292, and ENGL 211C or ENGL 221C or ENGL 231C must be passed with a C (2.0) or better. Pre- or corequisites: BIOL 331 or OEAS 306.

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 475/575. Neurobiology. 3 Credits.
This course will focus on understanding brain structure as well as the morphology and function of the central nervous system in general. Fundamental processes such as neuron morphogenesis, guidance, polarity, migration, and growth cone motility will be emphasized. The cellular and molecular basis of neurological disorders also will be discussed. Prerequisites: BIOL 240 or BIOL 250 or BIOL 293 must be passed with a grade of "C" or higher or permission of instructor.

BIOL 476/576. Cancer Immunology and Immunotherapy. 3 Credits.
Introduction to the immune system, tumor antigens, immunosuppressive cells and molecules, and cancer immunotherapy treatment approaches. Prerequisites: BIOL 123N, BIOL 124N, and BIOL 293 or permission of the instructor.

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 316 and BIOL 317 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 481W/581. Forensic and Medical Entomology. 5 Credits.
This is a writing intensive course that provides a comprehensive survey of the insects used in legal investigations and medically important insects. Topics covered include the taxonomy, morphology, physiology, reproductive and developmental biology, and ecology of these insects along with the diseases they may vector. Research techniques in forensic and medical entomology will be learned through both field and laboratory activities. Prerequisites: BIOL 291 and BIOL 292 must be passed with a grade of C (2.0) or higher.

BIOL 482/582. Human and Veterinary Parasitology. 3 Credits.
The course will emphasize the principles of parasitism, including biology, physiology, genetics, morphology, and phylogeny of the major parasitic groups with a specific focus on the significant parasites of humans and animals of veterinary importance. The general biology of parasites including their life cycles, diagnosis, and treatment will be included as well. Prerequisites: BIOL 293 and BIOL 303 must be passed with a grade of C or higher or permission of instructor.

BIOL 487. Honors Research in Biology. 2 Credits.
Student performs mentored research in biological science. Student and faculty mentor must meet on a regular basis. The course is intended to be taken as a series with BIOL 488W. Available for pass/fail grading only. Prerequisites: admission to the Honors Program and senior standing.
BME 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. 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.

BIOI 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 241 or BIOL 251 must be passed with a grade of C (2.0) or higher.

BIOI 494. Entrepreneurship in Biology. 3 Credits.
Ecological entrepreneurs consider the impact of products on the environment and are mindful of natural resources, sustainability, and social equity. In this novel class students will test their skill at biologically-inspired entrepreneurial after learning about biomimicry, sustainability, and other relevant concepts. Prerequisites: BIOL 291 and BIOL 292.

BIOI 496/596. Topics in Biological Sciences. 1-4 Credits.
A structured specialty course for students at the senior level. Courses may include lecture and laboratory components. Prerequisites: BIOL 123N and BIOL 124N must be passed with a grade of C (2.0) or higher, junior standing, and permission of instructor.

BIOI 497. Undergraduate Research. 1-3 Credits.
The student performs laboratory and/or field research under the supervision of a Department of Biological Sciences faculty member. The student must devote a minimum of 3 hours per week for the equivalent of 1 credit. The student must maintain lab/field notes, must submit a written report, may be required to give an oral presentation, and must be evaluated by the faculty supervisor. If 3 credits are taken, then BIOI 497 counts as an upper-level biology elective course with a laboratory or field component. Prerequisites: BIOL 123N and BIOI 124N or BIOI 138N and BIOI 139N must be passed with a grade of C or higher, junior standing, permission of the supervising faculty member, and permission of the Chief Departmental Advisor and Chair of the Department of Biological Sciences.

BIOI 498/598. Independent Study. 1-3 Credits.
This unstructured course is based on a supervised project, without a laboratory or field component, that is selected to suit the needs of the individual student. The completion of a formal scientific paper documented with the appropriate primary technical literature is required. An oral presentation also may be required. Contact the Chief Departmental Advisor for details. Prerequisites: BIOL 123N and BIOL 124N or BIOI 138N and BIOI 139N must be passed with a grade of C or higher; junior standing, permission of the supervising faculty member, permission of the Chief Departmental Advisor, and permission of the Chair of the Department of Biological Sciences also are required.

BME - Biomedical Engineering

BIOMEDICAL ENGINEERING Courses

BME 403. Introduction to Mathematical Modeling in Physiology. 3 Credits.
This course introduces model development and model formulation with differential equations in physiology. Students will learn how to use Matlab to solve differential equations and visualize their results. The physiological focus will be on cellular physiology, particularly ion channel dynamics and homeostasis. Prerequisites: BME 240 or BME 250 and MATH 200 or MATH 205 or MATH 211.

BME 404. Introduction to Biomaterials. 3 Credits.
This course will introduce the properties of biomedical materials used as implants, prostheses, orthosis, and tissue-engineered materials as medical devices in contact with tissues and organs. Biocompatibility, immunological responses, wound healing, clotting cascade, surface compatibility and characterization of materials used for implantable medical devices will be introduced. Other topics such as ethical considerations and medical device regulatory mechanisms will be presented. Prerequisites: BME 240 or BME 250 and MATH 200 or MATH 205 or MATH 211.

BME 406. Transport Phenomena in Biomedical Systems. 3 Credits.
The course focuses on basic principles of mass transport and biochemical reactions in biological systems. Topics include phase and reaction equilibrium, conservation relations, physiological transport in tissue-organ systems, transport of gases between blood and tissue, and designing of bioreactors and devices for biomedical engineering applications. Prerequisites: BME 240 or BME 250 and MATH 200 or MATH 205 or MATH 211.

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, electromeasurement, and therapy 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.

BME 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/MSIM 462. Prerequisites: a grade of C or better in MATH 212.

BME 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.

BNAL - Business Analytics

BUSINESS ANALYTICS Courses

BNAL 206. Business Analytics I. 3 Credits.
An introduction to methods of business analytics. Topics are concentrated in descriptive analytics, which 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 301. Spreadsheet and Data Management Techniques for Decision Making. 3 Credits.
Data management and analysis for business decision making. Topics include data validation, a variety of functions such as lookup, logical, math, text, and financial functions, pivot tables, data models, and Monte Carlo simulation. Emphasis is on preparing descriptive, predictive, and prescriptive information to enhance effectiveness of management’s decisions. Prerequisites: ACCT 201, BNAL 206, and a declared major in the University or permission of the Dean's Office.

BNAL 306. Business Analytics II. 3 Credits.
Advanced descriptive and predictive analytics topics include advanced hypothesis testing, analysis of frequency data, correlation analysis, simple and multiple regression, and time series forecasting. Prescriptive analytics topics include linear programming formulation and managerial analysis, and distribution models. PERT/CPM models are also covered. Computer software is utilized throughout the course. Emphasis is on the interpretation of the various outcomes of the application of business analytics tools. 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 Development Services in the semester prior to enrollment. 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 Development Services 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 Development Services 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 403/503. Data Visualization and Exploration, 3 Credits.
This course introduces students to concepts and processes, technologies, and methodologies that are commonly used in data visualization that an organization may use to enhance its descriptive, predictive, and prescriptive methods for making fact-based decisions. Prerequisite: A grade of C or better in BNAL 306 or permission of the instructor.

BNAL 406. Advanced Spreadsheet-Based Data Analytics, 3 Credits.
This course introduces students to the use of advanced data modeling in spreadsheets and self-service business intelligence tools to analyze data and make business decisions in Excel. Power Pivot and the DAX language are used to extract meaningful information from large data sets. Power Query is introduced as an ETL tool, and the Power BI Desktop is used for visualization purposes. These topics are then applied to analyze problems in predictive analytics. Examples include advanced multiple regression and classification techniques in data mining. Prerequisites: A grade of C or better in BNAL 301, BNAL 306, and a declared major in the University or permission of the Dean’s Office.

BNAL 407/507. Prescriptive Analytics of Management Science, 3 Credits.
Students are introduced to prescriptive analytics through formulation and solution of mathematical models, with a particular focus on optimization models. The business use of the models, as well as their limitations, is emphasized. Topics include linear, integer, non-linear programming, network models, genetic algorithms, decision analysis, and project management models. Prerequisites: A grade of C or better in BNAL 306 and a declared major in the University or permission of the Dean’s Office or the instructor.

BNAL 415/515. 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: A grade of C or better in BNAL 306 and a declared major in the University or permission from the Dean's Office.

BNAL 432/532. Predictive Analytics for Business, 3 Credits.
Predictive analytics techniques for business. 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, EXCEL, R, and/or Python. 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.

BNAL 476/576. Simulation Modeling and Analysis for Business Systems, 3 Credits.
Simulation modeling is an integral part of the analytics revolution, enabling the creation of models that can represent the variability that exists in many real business systems. This course covers the theory and application of simulation modeling, with an emphasis on how simulation provides predictive and prescriptive analytics to support business decision-making. Topics include simulation fundamentals, the project life-cycle, model development, input and output analysis, verification and validation, and the presentation of a simulation study. We utilize a major commercial simulation software package for assignments and class projects. Prerequisites: OPMT 303 with a grade of C or better 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.

BUSN 401/501. Business Planning for Entrepreneurs I, 2 Credits.
Students are introduced to readily available resources to research and analyze a comprehensive feasibility process including a clear statement of the business idea/model, selection of the North American Industry Classification System (NAICS) codes, and research and analysis of the applicable industry, market and competitors. A marketing strategy, to include pricing, is developed, with emphases on social media and similar outreach tools. Prerequisites: Junior standing.

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.
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. Prerequisite: ENGN 110.

CEE 195. Topics in Civil and Environmental Engineering. 1-3 Credits.
Special topics in civil and/or environmental engineering at the introductory level. Prerequisite: Permission of the department chair.

CEE 204. Statics. 3 Credits.
Introduction to engineering problems and their solutions through a study of the statics of particles and rigid bodies. Pre- or corequisite: PHYS 231N, Prerequisite: MATH 211 with a C or higher.

CEE 205. Engineering Dynamics. 3 Credits.
This course is designed to assist engineering students in acquiring a more thorough knowledge and proficiency in engineering mechanics. The course follows CEE 204 in the mechanics sequence. In this course, kinematics of particles and rigid bodies, mass moments of inertia, acceleration, work, energy, power, and special applications in the civil engineering field, such as inertia problems in vehicle collisions, rudiments of wave dynamics, etc. are included. Prerequisite: CEE 204 with a grade of C or better.

CEE 219. Surveying for Engineers. 1 Credit.
This course will provide an introduction to Land Surveying theory and practices as they relate to Civil Engineering. Upon successful completion of this course, prospective engineers will have a working knowledge of: survey computations; survey field methods; survey benchmarks and data; survey elements of land development; and survey legal issues.

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. Prerequisites: CEE 204 with a grade of C or better.

CEE 240. Geographic Information Systems in Civil and Environmental Engineering. 3 Credits.
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 CAD. Use of GIS software in the creation and application of GIS spatial databases to engineering problems. Prerequisite: MATH 212, sophomore standing or higher.

CEE 295. Topics in Civil and Environmental Engineering. 1-3 Credits.
Topics in civil and/or environmental engineering at the basic engineering level. Prerequisite: Permission of the department chair.

CEE 304. Probability Statistics and Risk in Civil and Environmental Engineering. 3 Credits.
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. Prerequisite: junior standing in CEE.

CEE 305. Civil and Environmental Computations. 3 Credits.
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. Prerequisites: junior standing, MATH 307, and CS 150 or ENGN 150.

CEE 310. Structures I. 3 Credits.
Analysis of statically determinate structures. Influence lines and structural design. Displacement calculations. Introduction to analysis of indeterminate structures. Prerequisites: CEE 220 with a grade of C or better.

CEE 320. Civil Engineering Materials. 3 Credits.
Properties of steel, portland cement concrete, bituminous concrete, aggregates, and timber. Prerequisites: CEE 220.

CEE 323. Soil Mechanics. 3 Credits.
Fundamental engineering properties of soil and their application to earth structures and foundations. Topics include seepage, compaction, strength, and deformation characteristics of soils. Corequisite: CEE 335. Prerequisite: CEE 220.

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 flow in closed conduits and with a free surface. Introduction to thermodynamics. Prerequisites: MATH 212 and CEE 205 or MAE 205.

CEE 335. CE Soils and Hydraulics Laboratory. 1 Credit.
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. Corequisites: CEE 323 and CEE 340.

CEE 340. Hydraulics and Water Resources. 3 Credits.
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. Corequisite: CEE 335. Prerequisites: CEE 304; CEE 330 with a grade of C or better.

CEE 350. Environmental Pollution and Control. 3 Credits.
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. Prerequisites: CHEM 121N-CHEM 122N, MATH 211, PHYS 231N.

CEE 367. Cooperative Education. 1-3 Credits.
May be repeated for credit. 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 Development Services prior to the semester in which the work experience is to take place. Prerequisites: approval by the department and Career Development Services in accordance with the policy for granting credit for cooperative education programs.

CEE 368. Internship. 1-3 Credits.
May be repeated for credit. 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. Prerequisites: approval by department and Career Development Services.

CEE 369. Practicum. 1-3 Credits.
May be repeated for credit. 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. Prerequisites: approval by department and Career Development Services.

CEE 370. Transportation Fundamentals. 3 Credits.
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, and traffic impact analysis. Prerequisite: Junior standing.
CEE 395. Topics. 1-3 Credits.
Topics in civil and/or environmental engineering. Prerequisite: permission of the instructor.

CEE 402. Professional Practice of Engineering. 1 Credit.
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. Prerequisite: Senior standing.

CEE 403W. Civil Engineering Design Project and Professional Practice. 3 Credits.
For graduating seniors only. 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. Prerequisites: grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

CEE 410. Concrete Design. 3 Credits.
Fundamental concepts of reinforced concrete analysis and design by ultimate strength and working stress methods. Prerequisites: CEE 310 with a grade of C or better.

CEE 414/514. Masonry Structures Design. 3 Credits.
Masonry materials, reinforced beams and lintels, walls, columns and pilasters, shear walls, and buildings. Prerequisite: CEE 310.

CEE 415/515. Steel Structures Design. 3 Credits.
Load and resistance factor design methods for steel structures. Prerequisite: CEE 310.

CEE 416/516. Wood Structures Design. 3 Credits.
Design of wood structures based on national design specification and load and resistance factor design. Prerequisite: CEE 310.

CEE 430/530. Foundation Engineering. 3 Credits.
Subsurface exploration, site preparation, design of shallow and deep foundations, and retaining structures. Prerequisites: CEE 323 with a grade of C or better.

CEE 431/531. Earth Structures Design with Geosynthetics. 3 Credits.
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. Prerequisite: CEE 323.

CEE 432/532. Introduction to Earthquake Engineering. 3 Credits.
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. Prerequisites: senior standing and permission of the instructor.

CEE 433/533. Geomaterials Stabilization. 3 Credits.
This course studies soil and aggregate’s physical, chemical and biological stabilization procedures. Students are introduced to chemical stabilization analysis and design using materials such as cement, lime, and fly ash. Physical ground modification, compaction methods and mechanical stabilization application and design are also studied. Prerequisite: CEE 323.

CEE 440/540. Hydraulic Engineering. 3 Credits.
Hydraulic transients; flow control structures; computer analysis of hydraulic systems; design of pipelines, open channels and culverts. Prerequisite: CEE 340.

CEE 446/546. Urban Stormwater Hydrology. 3 Credits.
Storm rainfall analysis, design rainfall hyetographs, runoff calculation procedures, detention basins, use of mathematical models to analyze and design urban storm drainage systems. Prerequisite: CEE 340.

CEE 447/547. Groundwater Hydraulics. 3 Credits.
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. Prerequisite: CEE 340.

CEE 450/550. Water Distribution and Wastewater Collection System Design. 3 Credits.

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 Waste Treatment. 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 455/555. Pollution Prevention and Green Engineering. 3 Credits.

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.
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 lignocellulosic materials (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. Prerequisite: permission of the instructor.

CEE 471/571. Transportation Operations I. 3 Credits.
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. Prerequisite: CEE 370.

CEE 474/574. Transportation Data Analytics. 3 Credits.
This course presents the basic techniques for transportation data analytics. It will discuss statistical modeling, prominent algorithms, and visualization approaches to analyze both small- and large-scale data sets generated from transportation systems. Practices of using different data for various real-world traffic/transportation applications and decision making will also be discussed. Prerequisites: Basic probability and statistics (e.g., STAT 330); any programming language such as C, Python or Java is beneficial but not required.
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 or CET 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.

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 260. Plan 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 (CAD) in assembling a set of plans and specifications. Prerequisite: CET 210 or CET 120 or MET 120.

CET 295. Topics. 1-3 Credits.
Study of selected topics.

CET 296. Topics. 1-3 Credits.
Study of selected topics.
CET 365. Building Information Modeling (BIM). 3 Credits.
This course is an introduction to building information modeling (BIM) and its implementation in building design and construction. Topics include the fundamentals of information modeling; business benefits of BIM; impacts of BIM on design and construction processes; integrated design process and project delivery; popular software applications and basic modeling techniques; and popular areas and best practices of BIM implementation. Prerequisite: CET 260.

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 CET program director and Career Development Services (CDS) in accordance with the policy for granting credit for Cooperative Education programs; a student who needs to add additional credit to maintain full-time status should contact the program director.

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. Prerequisites: approval by department and Career Development Services.

CET 369. Topics. 1-3 Credits.
Topics in Civil Engineering Technology. Prerequisites: permission of the instructor.

CET 370. 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. Pre- or corequisite: 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 hydraulic 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.

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. Pre- or corequisite: 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.

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. Prerequisites: CET 330.

CET 428. Buried Infrastructure. 3 Credits.
This is a capstone design course in the field of water resources. It incorporates pressurized pipe flow, gravity flow, and hydrology into the design of municipal infrastructure for water, sewer and stormwater projects. Topics will also cover rehabilitation and replacement of aging infrastructure in urban and neighborhood settings. Use of spreadsheets is required. Prerequisites: CET 332 or CET 334 or CET 325.

CET 435. Design of Reinforced Concrete Foundations. 3 Credits.
Analysis and design of reinforced concrete foundations typically used in buildings and bridges. Topics include loads and loading groups, methods of analysis and design, abutments, and isolated and continuous footings. The class will be focused on the load and resistant factor design method. Use of the ASCE 7, ACI and AASTHO codes is necessary. Prerequisites: CET 340 and CET 410.

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. Pre- or corequisite: 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. Pre- or corequisite: 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 468. Construction Finance. 3 Credits.
A study of financial management in construction for civil engineering projects based on conceptual and construction plans. The emphasis of the course is on building construction but equally applicable to other construction type projects. Development of techniques required to effectively monitor the financial aspects of construction projects. This course is practice oriented. Use of spreadsheets is highly recommended. Prerequisite: Junior Standing.

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.
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, thermodynamics, and gas laws. A student receiving credit for CHEM 121N cannot receive additional credit for CHEM 103 or CHEM 105N or CHEM 137N. CHEM 121N + CHEM 122N satisfy 4 credits of the University’s Nature of Science general education requirement. Prerequisites: MATH 102M or MATH 103M or higher with a grade of C or better and a qualifying score on the Chemistry Placement Exam or successful completion of the Chemistry Placement online modules or CHEM 103 or CHEM 105N with a grade of C or better. Pre- or corequisites: CHEM 122N.

CHEM 122N, Foundations of Chemistry II Laboratory. 1 Credit.
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. Pre- or corequisite: CHEM 121N.

CHEM 123N, Foundations of Chemistry II Lecture. 3 Credits.
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. Prerequisites: CHEM 121N with a grade of C or better.

CHEM 124N, Foundations of Chemistry II Laboratory. 1 Credit.
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. Prerequisites: CHEM 121N and CHEM 122N with grades of C or better. Pre- or corequisite: CHEM 123N.

CHEM 125, Foundations of Chemistry II Lab with Introduction to Chemical Research. 4 Credits.
This course introduces students to information literacy and research in chemistry. Students will develop skills in searching, evaluation, citing and ethics associated with information required for research projects. Further, students will gain experience in experimental design and chemical research. Corequisite: CHEM 123N. Prerequisites: CHEM 121N with a grade of B or better AND CHEM 122N with a grade of B or better AND permission of the instructor.

CHEM 171T, Influence of Polymers on Society. 3 Credits.
In this course, the history of synthetic and natural polymers will be studied from their initial development to modern day. Through these studies, students will learn how polymers are produced, the properties of polymers, and the many application of polymers. Further, the impact these materials have on society will be examined in many different areas such as medicine, electronics, consumer goods and the environment.

CHEM 173T, Nutritional Biochemistry. 3 Credits.
Students will explore the role biotechnology plays in understanding and advancing nutrition and the effects this has on human health, development and societies. The key biological molecules such as vitamins, amino acids, proteins, fats and carbohydrates and their nutritional functions will be discussed. Nutritional biochemistry as it relates to human development, medicine and the evolution of human species will be explored. Students will review present day nutritional issues such as popular diets, organic foods, farming practices and advances such as genetically modified foods.
CHEM 175T. Neurotechnology. 3 Credits.
Neurotechnology is the technology used to understand (assessment neurotechnology) and moderate (intervention neurotechnology) brain chemistry with regards to various aspects of consciousness, thought, memory, perception, addiction and other higher order activities and disorders in the brain. From pharmaceutical drugs to brain scanning, the impact of neurotechnology affects nearly everyone either directly or indirectly - for example: drug use for depression, sleep, ADD, or neurotic behavior; cancer scanning; stroke rehabilitation; etc. This course will explore the basics of neurotechnology and its impact on human behavior and performance as well as broader impacts on society. Further, students will learn how neurotechnology is used to assess and intervene in the neurochemistry of the brain with a particular emphasis on addictive behavior and neurodegenerative disorders.

CHEM 210. Organic Chemistry I Lecture. 3 Credits.
Introduction to organic compounds, isomerism and nomenclature, stereochemistry and conformational analysis, in depth mechanistic understanding of proton transfer reactions, substitution and elimination reactions, and addition to C=C bonds. Prerequisites: CHEM 123N with a grade of C or better.

CHEM 211. Organic Chemistry I Lecture. 3 Credits.
Experience is offered in fundamental laboratory techniques applicable to the characterization, separation and purification of various organic compounds including stereoisomers and introduction to organic reactions. Prerequisites: CHEM 124N or CHEM 125 with a grade of C or better. Pre- or corequisite: CHEM 211 with a grade of C or better.

CHEM 213. Organic Chemistry II Lecture. 3 Credits.
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. Prerequisite: CHEM 211 with a grade of C or better.

CHEM 214. Organic Chemistry II 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 216. Advanced Organic Chemistry Laboratory. 2 Credits.
Experience is offered in advanced organic reactions and spectroscopic techniques. In addition, students will carry out a short, customized, research project in Organic Chemistry or Organic Materials. Prerequisites: CHEM 211 and CHEM 212 with a grade of C or better; approval by the course instructor or coordinator. Pre- or corequisite: CHEM 213.

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 and MATH 163 or MATH 205 with a grade of C or better.

CHEM 322. Analytical Chemistry Laboratory. 2 Credits.
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. Prerequisites: CHEM 124N or CHEM 125 with a grade of C or better. Pre- or corequisite: CHEM 321 or permission of the instructor.

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.
A laboratory class focusing on a variety of physical chemical techniques. Topics may include electronic, vibrational (Raman) and NMR spectroscopies, calorimetry, viscosity, and atomic force microscopy. This is a writing intensive course, aiming to achieve an in-depth understanding of the physical principles underlying the techniques. Prerequisites: grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C. Pre- or corequisite: CHEM 331 with a grade of C or better.

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.
A laboratory class focusing on a variety of physical chemical techniques. Topics may include X-Ray Diffraction, Bomb Calorimetry, Thermal Gravimetric Analysis (TGA), Conductance of Solutions, and Polymer Physical Properties. This course may also include a team project that will incorporate many of the techniques learned in the physical chemistry lab sequence. This project will introduce the students to working as a team to address a specific challenge such as one might encounter in an industrial or government laboratory setting. This is a writing intensive course. Prerequisites: grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C. Pre- or corequisite: CHEM 332W and CHEM 333 with a grade of C or better.

CHEM 339T. The Chemistry of the Environment. 3 Credits.
This class explores the impact of chemical technologies on current environmental topics using basic chemical principles and the scientific method as standards for evaluating and understanding pressing environmental issues. Topics include global and ocean warming, air pollution, atmospheric ozone depletion, effects of enhanced UV light, acid rain and ocean acidification, toxic heavy metals, radioactivity and nuclear power plant disasters, indoor air quality and radon, water pollution, sewage and water treatment, drinking water quality, waste disposal and plastics, pesticides, and the food chain. The course will use math to a modest degree including basic Algebra. It is highly recommended that students have passed a college level algebra math class (e.g., MATH 102M or MATH 103M or higher) and one year of high school chemistry. Prerequisites: Any General Education Nature of Science (N) course.

CHEM 343T. Science and Technology in Art. 3 Credits.
This combined lecture and laboratory class will explore the chemical and physical properties of artists’ materials from pigments and binders to ceramics. Topics will include the nature of light and color, historical origins and development of pigments and artistic methods, synthesis of dyes and pigments, and the application of technology to art historical analysis. The course will include hands-on experience with modern laboratory equipment and field trips to local museums and conservation labs. Prerequisites: Completion of one Nature of Science general education course or permission of the instructor.

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, an introduction to transition metal coordination chemistry, and human applications of inorganic chemistry. Prerequisites: Grade of C or better in CHEM 123N.

CHEM 352. Inorganic Chemistry Laboratory. 2 Credits.
Synthesis of metal and nonmetal inorganic compounds and organometallic compounds, their characterization by physical methods, and a study of their properties. Prerequisite: CHEM 124N or CHEM 125. Pre- or corequisite: CHEM 351 with a grade of C or better.

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.
May be repeated for credit. 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) Prerequisite: approval by the department and Cooperative Education/Career Development Services in accordance with the policy for granting credit for Cooperative Education programs.

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. Prerequisites: CHEM 331/CHEM 332W (Chemistry major) or CHEM 441/CHEM 442W (Biochemistry major) and the approval of the appropriate departmental coordinator.

CHEM 411/511. Natural Products Chemistry in the Carribean. 4 Credits.
A bioorganic and natural products course that entails the chemistry of the use of chromium, vanadium, and herbs in medicine and the use of tunicates as biomonitor of heavy metal pollution in Jamaica. This is a study abroad course intended for the Maymester term. Prerequisites: CHEM 211 and CHEM 212 with a C or better.

CHEM 415/515. Intermediate Organic Chemistry. 3 Credits.
An in-depth look at organic reaction mechanisms, including polar, pericyclic, radical and organometallic reactions. Prerequisites: CHEM 211-CHEM 213 with a grade of C or better.

CHEM 421/521. Instrumental Analysis Lecture. 3 Credits.
Designed to be taken concurrently with CHEM 422/ CHEM 522. A study of the basic principles of spectroscopic, chromatographic, and electrochemical methods of quantitative chemical analysis. Methods of chemical instrumentation are also included. Prerequisite: CHEM 331 with a grade of C or better.

CHEM 422/522. Instrumental Analysis Laboratory. 3 Credits.
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. Prerequisite: CHEM 332W with a grade of C or better. Pre- or corequisite: CHEM 421/CHEM 521 with a grade of C or better.

CHEM 439/539. Introduction to Pharmaceutical Chemistry. 3 Credits.
An introduction to the fundamental concepts of drug action including pharmacodynamics (effect of drugs on the body) and pharmacokinetics (ADME: absorption, distribution, metabolism and elimination) of drugs; an introduction to the process of new drug discovery and synthesis will also be taught. Prerequisites: CHEM 213 and CHEM 214 (or CHEM 216) with a grade of "C" or higher; CHEM 321 and CHEM 441 recommended.

CHEM 441/541. Biochemistry Lecture. 3 Credits.
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. Prerequisite: CHEM 213 with a grade of C or better.

CHEM 442W/542. Biochemistry Laboratory. 4 Credits.
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. Prerequisites: CHEM 214 with a grade of C or better and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better. Pre- or corequisite: CHEM 441/ CHEM 541 with a grade of C or better.

CHEM 443/543. Intermediate Biochemistry. 3 Credits.
This course presents and 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. Prerequisite: CHEM 441/CHEM 541 with a grade of C or better or equivalent.

CHEM 449/549. Environmental Chemistry. 3 Credits.
An overview of the natural chemical systems operating in the atmosphere, in the terrestrial environment (both water and soils), and in the oceans, and the potential effects that human activities may have on them. Specific topics include the origin and evolution of the earth and life, the chemistry of the atmosphere (including the ozone layer and greenhouse effect), the organic and inorganic components of soil and water, chemical weathering of rocks, metal complexation, biological processes in soil and water, and global-scale chemical processes. Prerequisites: CHEM 123N, CHEM 213 and CHEM 321 with a grade of C or higher or permission of the instructor.

CHEM 451/551. Advanced Inorganic Chemistry. 3 Credits.
Theoretical aspects of modern inorganic chemistry: bonding theories, stereochemistry, acid-base theories, coordination compounds, organometallic and bioinorganic compounds. Prerequisites: CHEM 351 with a grade of C or better.

CHEM 452/552. Advanced Inorganic Chemistry Laboratory. 2 Credits.
Synthesis of metal and nonmetal inorganic compounds and organometallic compounds, their characterization by modern physical methods, and a study of their properties. Prerequisites: CHEM 351 and CHEM 352.

CHEM 453/553. Essentials of Toxicology. 3 Credits.
Fundamental principles of toxicology: dose-response relationship, toxicologic testing, chemical and biological factors influencing toxicity, organ toxicity, carcinogenesis, mutagenesis, teratogenesis. Prerequisite: CHEM 213 with a grade of C or higher.

CHEM 460/560. Frontiers in Nanoscience and Nanotechnology. 1 Credit.
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. Prerequisite: junior standing.

CHEM 468. Research Methods in Mathematics and Science. 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 scientific results. Students will perform four independent inquiries, combining skills from mathematics and science to solve research problems. Required for Chemistry teaching licensure track; not available as upper-division elective in content area. Prerequisites: CHEM 331, STEM 201, and admission to the MonarchTeach program.

CHEM 485. Chemistry and Biochemistry Seminar. 1 Credit.
The formal presentation of a chemical or biochemical topic before students and faculty. Students will also take Major Field Test during this course. Prerequisite: CHEM 331 and Senior standing.

CHEM 490. Senior Thesis I. 1 Credit.
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. Prerequisite: Chemistry or Biochemistry major; Senior standing; Cumulative GPA of 3.20 or higher.
CHEM 494. Entrepreneurship in Chemistry and Biochemistry. 3 Credits.
A high level of economic activity and development for any industrialized nation has at its core a strong STEM component. Within this component, the fields of chemistry and biochemistry form one of the strongest interdisciplinary links by providing an understanding of the processes and products at a molecular level. This course will allow students to combine their academic knowledge in chemistry and biochemistry with the needs of real-world businesses to formulate an economically viable business plan that encompasses a scientifically and economically sound proof-of-concept. Prerequisite: Junior standing.

CHEM 495. Selected Topics. 1-3 Credits.
Study of selected topics. 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.
This course focuses on the fundamental elements of the Chinese language within a cultural context. Emphasis is placed on building a foundation of basic listening, speaking, reading, and writing skills. The course includes Chinese Pinyin phonetic system, character formation, basic sentence structures, and Chinese culture and cultural activities. Students are expected to comprehend and respond to essential topics in Chinese and demonstrate their cultural awareness.

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. The course includes Chinese basic sentence patterns and real-life topics on Chinese cultural activities. Students are expected to comprehend and respond with grammatical accuracy to spoken and simple written Chinese and demonstrate their cultural awareness. 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. Students learn to respond to topics of interest to college-age students, such as campus life, career planning, and Chinese cultural traditions. Students are exposed to the speech of native speakers in real cultural situations and develop sensitivity to communicative strategies and cultural competency. 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 in the real cultural context. The course trains students to interpret textual and cultural meanings and to express their opinions and cultural understanding by using connected paragraph length discourse. Prerequisites: CHIN 311.

CHIN 395. Topics in Chinese. 1-3 Credits.
Selected topics, genres, authors and/or literary, cultural, sociopolitical, or historical movements in the Chinese-speaking world. May be repeated for credit if the topic is different. Prerequisites: Junior standing or permission of the instructor.

CHIN 396. Topics in Chinese. 1-3 Credits.
Seminars engage students in in-depth study of a specified topic through readings, research and oral and written student reports. Special attention is paid to theoretical and bibliographic issues. Topics vary according to the areas of expertise and professional interests of departmental faculty. May be repeated if topics are different. 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. May be repeated for credit if the topic is different. 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. Cross-listed with PUBH 200.

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-CHEM 106N or CHEM 121N-CHEM 122N and CHEM 123N-CHEM 124N; BIOL 240, BIOL 241, BIOL 250 or BIOL 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. Prerequisites: CHP 200 and a declared major in the University or approval of the program director.

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. Prerequisites: CHP 200 and a declared major in the University or approval of the program director.

CHP 360. Introduction to Global Health. 3 Credits.
This course introduces students to health-care delivery systems of non-Western countries, specifically developing countries. The various factors that influence health-care planning and delivery of health services are addressed. Prerequisite: CHP 200.

CHP 369. Practicum in Health Sciences. 1-3 Credits.
This course is intended for the student in the College of Health Sciences seeking a CAP experience. Prerequisites: junior standing and approval of the Health Sciences Advisor and the Career Development Services.
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. Prerequisites: CHP 200 and a declared major in the University or approval of the program director.

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.
A survey of philosophical problems common to health sciences, including an analysis of the nature of health in its historical and contemporary contexts. Prerequisite: permission of the instructor.

CHP 415W/S15. Critical Issues in Public/Community Health Administration. 3 Credits.
Identification and analyses of critical issues currently facing public/community health and the American health care system. This is a writing intensive course. Prerequisites: ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better and a declared major in the University or approval of the program director.

CHP 420/520. Foundations of Gerontology. 3 Credits.
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. Prerequisite: permission of instructor.

CHP 425/S25. Health Aspects of Aging. 3 Credits.
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. Prerequisite: CHP 420/CHP 520 or permission of the instructor.

CHP 430/S30. Community Health Resources and Health Promotion. 3 Credits.
Designed to provide information about community health resources. This is a writing intensive course. Prerequisites: ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better and a declared major in the University or approval of the program director.

CHP 440/540. Finance and Budgeting in Healthcare. 3 Credits.
This course covers financial management functions in healthcare organizations including operating and capital budgeting processes along with budgeting and financial controls. Prerequisites: junior standing and a declared major in the University or approval of the program director.

CHP 445/545. Health Services Research Methods. 3 Credits.
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. Prerequisites: junior standing and a declared major in the University or approval of the program director.

CHP 450/550. Public and Community Health Administration. 3 Credits.
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. Prerequisite: permission of instructor.

CHP 456/556. Substance Use and Abuse. 3 Credits.
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. Prerequisite: permission of instructor.

CHP 456/561. 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. Prerequisites: CHP 200 and a declared major in the University or approval of the program director.

CHP 465/S65. Policy and Politics of Health. 3 Credits.
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. Prerequisite: junior standing.

CHP 468. Internship. 1-3 Credits.
The internship will allow a person new to the health administration field to complete a capstone internship to gain entry skills for a beginning career pathway in health services administration. The course is intended to provide cumulative experience and assimilation of all the theoretical aspects learned in the coursework in a practical/work setting. Internship is the last course in the program coursework. A minimum of 200 hours is required. Prerequisites: CHP 415W or CHP 430W, CHP 440, CHP 445, CHP 450, CHP 461, and CHP 480.

CHP 470/570. Death, Dying and Survivorship. 3 Credits.
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. Prerequisite: permission of instructor.

CHP 475/575. Healthcare Marketing. 3 Credits.
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. Prerequisites: a declared major in the University or approval of the program director.

CHP 480/580. Health Ethics and the Law. 3 Credits.
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. Prerequisites: a declared major in the University or approval of the program director.

CHP 485/585. Health Informatics. 3 Credits.
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. Prerequisites: junior standing and a declared major in the University or approval of the program director.

CHP 495/595. Topics in Public/Community Health Administration. 1-3 Credits.
This course provides the opportunity for the study of selected topics in public/community health, including informatics, under the supervision of a faculty member. Prerequisite: permission of the instructor.

CHP 496/596. Topics in Public/Community Health Administration. 1-3 Credits.
This course provides the opportunity for the study of selected topics in public/community health, including informatics, under the supervision of a faculty member. Prerequisite: permission of the instructor.

CHP 497/597. Readings in Public/Community Health Administration. 1-3 Credits.
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. Prerequisite: permission of the instructor.
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 272G. Digital Literacy. 3 Credits.
Digital literacy refers to the unequal understanding people have about how digital technologies work, how that work is regulated, and how digital technologies are used - by us and by others - as effective and strategic communication and information tools. This course offers students a pathway to become digitally literate by teaching them how the work they perform on digital platforms impacts their interpersonal, communal, and social interactions as consumers, citizens, and content producers.

COMM 280T. Entertainment Technologies. 3 Credits.
This course is an introduction to the entertainment industry including working methods, processes, and equipment for live, recorded, and interactive entertainment. The exploration will include theatre, opera, dance, concert productions, theme parks, themed-retail, film production, immersive, interactive and virtual environments, and gaming technology. Attention is given to the positive and negative aspects of entertainment technologies and how they impact culture and society.

COMM 295. 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 by academic advisors.

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 course offers students 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 308W. 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. This is a writing intensive course. Prerequisite: 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 324. British Media in London. 3 Credits.
This is an immersive London based study of the historical, social and artistic impact of Britain's media on the world. From dramas to documentaries to journalism, the UK serves as one of the world’s most reliable outlets for exciting thought, analysis, aesthetic sensibility and production standards. From Shakespeare to James Bond to Harry Porter, British productions garner some of the world’s highest audiences. The BBC alone has an expansive foot-print in all international media. In this course students will visit key media entities and professionals in their studios, soundstages and theatres. Prerequisites: COMM 270A or THEA 270A.

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 329. Making African-American Cinema. 3 Credits.
This introductory course on African-American cinema will focus on a variety of contemporary films, media clips, and video presentations concerning issues and topics that reflect the diversity within the African-American community of young adults between the ages of 18 to 25. The main goal of the class is to review historical films produced for African-Americans and utilize that data to conduct research and develop projects that represent the cultural diaspora of this audience, which is often not reflected in mainstream media, in Hollywood or major independent media outlets such as HBO or Showtime. Cross-listed with THEA 332. Prerequisite: 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 332. 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 333W. Critical Thinking and Argument. 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 335W. Critical Thinking and Argument. 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 336. African-American Literature and Film. 3 Credits.
This introductory course on African-American cinema will focus on a variety of contemporary films, media clips, and video presentations concerning issues and topics that reflect the diversity within the African-American community of young adults between the ages of 18 to 25. The main goal of the class is to review historical films produced for African-Americans and utilize that data to conduct research and develop projects that represent the cultural diaspora of this audience, which is often not reflected in mainstream media, in Hollywood or major independent media outlets such as HBO or Showtime. Cross-listed with THEA 332. Prerequisite: Junior standing 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 342. Video Editing - Adobe Premiere. 3 Credits.
This course serves as an introduction to the art of video post-production. We explore the theory and practice of editing techniques with an in-depth examination of Adobe Premiere Pro. Prerequisites: Junior standing. Pre- or corequisite: COMM 271 or THEA 271 or DANC 271.

Old Dominion University
COMM 346. Screenwriting I. 3 Credits.
This course is an introduction to narrative screenwriting focusing on the traditional feature film. Students will study screenwriting principles through text reading, film viewing, script analysis, and substantial writing assignments. Focus is on story structure, character development, action, dialogue, and proper screenplay format. Prerequisites: ENGL 110C with a grade of C or better and ENGL 211C with a grade of C or better.

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 152R.

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 353. Animation. 3 Credits.
This is a project oriented, studio class that will focus on the art of animated storytelling from the traditional perspective of stop motion animation. Students will engage in individual research, writing, storyboarding, editing, and sound creation to produce original short animations. Crosslisted with THEA 353. Prerequisites: Junior standing or permission of instructor.

COMM 354. Drafting and Rendering for Stage and Screen. 3 Credits.
This course is an intermediate level course designed to introduce the student to the fundamentals of graphic skills necessary for the implementation of a scenic design on either the stage or in front of a lens. Techniques and skills will be demonstrated in drafting (hand and computer generated) and perspective sketching and rendering. Crosslisted with THEA 354. Prerequisites: THEA 225/COMM 225.

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 356. Silhouette Animation. 3 Credits.
This is a project oriented, studio class that will focus on the art of animated storytelling through the use of silhouette animation. Individual research, writing, design and implementation of knowledge to create new projects will be necessary to successfully meet the requirements of the course. All of the projects and class exercises in this course will require students to combine writing, storyboarding, a variety of art techniques, editing, and sound to produce original short animations. Prerequisite: Junior standing or permission of instructor.

COMM 357. Claymation. 3 Credits.
This is a project oriented, studio class that will focus on the art of animated storytelling from the traditional perspective of stop motion animation. Students will engage in individual research, writing, storyboarding, editing, and sound creation to produce original short animations. Prerequisites: Junior standing or permission of instructor.

COMM 358. Post-Production with DaVinci Resolve. 3 Credits.
This course will introduce students to Blackmagic DaVinci Resolve, a complete Post-Production Suite. Students will work their way through all the “rooms” in DaVinci: Media, Edit, Color, Fairlight, and Fusion and Delivery. The main focus will be on editing and color correction, but advanced sound post in Fairlight and Compositing in Fusion will also be explored. The focus will be on mixing software-specific techniques with a deepening understanding of the underlying theories of editing, color theory and principles of sound. The students will learn and apply industry standard best practices in the field of audio visual post-production. This is a hands-on workshop style post-production course. Prerequisite: COMM 271 or DANC 271 or THEA 271.

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 or 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 Development Services prior to the semester in which the work experience takes place. May be repeated for credit. Prerequisites: Approval of the department and Career Development Services, 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. An ePortfolio, 150 hours of site work, plus satisfactory evaluations by supervisor and cooperating faculty member are required. Available for pass/fail grading only. Available to Communication majors and minors only. Prerequisites: Approval of Departmental Internship Director 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. 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. Prerequisite: THEA 271 or COMM 271 or DANC 271.

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. Documentary Production I. 3 Credits.
This course offers the student an opportunity to explore the world of documentary filmmaking. Students will perform research to develop evidence in support of a thesis, then utilize the camera to capture a narrative story based on the thesis. Through this process, the student is better able to understand documentary filmmaking. Students will develop and deliver short documentary films by the end of the semester. Prerequisite: THEA 271 or COMM 271 or DANC 271 with grade of C or higher.

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 newscast 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 the Actor. 3 Credits.
This course is designed as a practical guide for directors to elicit strong performances from the actors who tell their stories. The class will establish vocabulary and practice techniques that are equally applicable to work in film or theatre. Ideally, the course will encourage students to think beyond genre as they create work that is both dramatically and humanly compelling. Prerequisites: COMM 271 or THEA 271 or DANC 271 or THEA 152R.

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. Prerequisite: THEA 271 or COMM 271 or DANC 271 with grade of C or higher.

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. Prerequisite: THEA 271 or COMM 271 or DANC 271 with grade of C or higher.

COMM 387. TV News Production. 3 Credits.
This course is designed to provide students with an introduction to the reporting, writing, and production aspects of a television news program. Students will learn how to create 15- and 30-minute news broadcasts by developing story ideas and news gathering. Students will also learn the intricacies of 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 television studio cameras. The goal of this course is to produce weekly news programs worthy of broadcast on local television. Students will assume the roles of reporter, writer, producer, floor director, photojournalist, videographer, technician, and more. Prerequisites: COMM 271 or THEA 271 or DANC 271 or COMM 382 or ENGL 382.

COMM 388. Motion Picture Aesthetics. 3 Credits.
This course is designed to develop within students a heightened and multifaceted awareness and appreciation for aesthetics of a particular type - motion picture aesthetics. Aesthetic considerations impact us intellectually, emotionally, psychologically, and viscerally. Professionals most definitely employ a language to filmmaking. One must learn the language of motion picture production and aesthetic design in order to convey concepts to their audiences. Prerequisite: COMM 270A or THEA 270A.

COMM 389. Sound Recording and Mixing for Film. 3 Credits.
This course will explore the best concepts in recording, editing and mixing audio for film and post-production. Students will be using Pro Tools hands-on to sync and mix audio to picture. Topics will include location audio, sound design, ADR, mixing, and more. Prerequisite: COMM 271 or THEA 271 or DANC 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 408. Health Communication. 3 Credits.
This course provides an overview of contemporary scholarship on phenomena within the scope of interpersonal health communication. Students will become familiar with fundamental communication processes that are involved in the interprofessional management of physical and mental health. Additionally, students will develop an awareness of how communication among friends, family members, professionals, and others influences people's well-being, and how, in turn, health and illness shape communication and relationship dynamics. Prerequisite: COMM 200S.

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.

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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 422/522. Listening to Self, Others, Nature and the Divine. 3 Credits. The listening course introduces students to: 1) Practices for exploring and developing listening competencies, 2) Theoretical perspectives and models of listening, and 3) Research on listening. Practice, theory, and research are all integrated across the contexts of self, others, nature, and the divine. Prerequisite: Junior Standing.

COMM 423/523. 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 424/524. Communicating Love. 3 Credits. This course investigates the history, types, characteristics, functions, and applications of love in everyday life, emphasizing the communication of altruistic/compassionate/agape love in four interrelated contexts: self, spirit, others, and creation. Theory, research, and applications of love will be explored within the spiritual, scientific, and dialogic (the conversation between science and spirit) perspectives. Prerequisite: 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 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 439. WHRO Production. 3 Credits. This is an experiential style course in the art and business of documentary production in the hands-on, professional environment of WHRO, which operates Hampton Roads' PBS affiliate TV station as well as two public radio stations. Students will be guided through the production of content for WHRO by an ODU faculty member and the WHRO staff. Cross-listed with THEA 439. Prerequisite: COMM 271 or THEA 271 or DANC 271. Pre- or corequisite: COMM 380/THEA 380 or COMM 383/THEA 383 or COMM 385/THEA 385 or COMM 386/THEA 386 or COMM 387/THEA 387 or COMM 389/THEA 389 or COMM 446/THEA 446.

COMM 440. Documentary Filmmaking Study Abroad. 3 Credits. This is an in-the-field study abroad course where students will, in small groups, produce a short documentary film about a local NGO (Non-Governmental Organization) creating positive change in the local community. Prerequisites: COMM 271 or THEA 271 or DANC 271 with a grade of C or higher.
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 461/561. Arts Administration. 3 Credits.
This course is an examination of the arts institutions, issues, and forces that shape the contemporary arts world including artists' rights, public art, corporate support, censorship, and multiculturalism. The course will cover Community Involvement, Collaborative Processes and Civil Societies, Theory and Practice of Planning, Public and Non-Profit Management, Organizational Behavior, Labor Management Relations, and Entrepreneurial Leadership. Prerequisites: Senior standing.

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 474. Reality Television. 3 Credits.
In the past two decades, reality television has become television's most replicated genre, documenting real people in "real" situations across broadcast, cable, and streaming outlets. This class investigates the historical, cultural, and industrial logics that govern the rise of reality TV, exploring how the genre intersects with issues of race, gender, sexuality, and class, and asking students to apply their understanding of the genre to detailed analysis of its ongoing efforts to capture the complexities of everyday life. Prerequisite: 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. Documentary Production II. 3 Credits.
Students will continue the work performed in COMM 380 with more advanced proposals, research, and production work. 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. Students complete the course with a complete feature film screenplay. Prerequisites: COMM 346 or THEA 346.

COMM 483. Advanced Video Project. 3 Credits.
This is an intensive capstone course in film production. Students experience pre-production, production, and post-production phases while creating a product to be entered in regional and national competitions. Prerequisites: COMM 383 or THEA 383.

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. Class may be repeated for credit as long as the genres are different. Prerequisites: COMM 270A or THEA 270A or COMM 260.

COMM 486/586. Advanced Filmmaking. 3 Credits.
This course offers students an opportunity to collaborate on a faculty led project beyond the scope of typical classroom projects. Students will execute an assigned duty for the duration of the semester. Prerequisites: three of the following: COMM 346 or THEA 346, COMM 383 or THEA 383, COMM 385 or THEA 385, COMM 386 or THEA 386, COMM 388 or THEA 388, COMM 483 or THEA 483.

COMM 487. Advanced TV News Production. 3 Credits.
This course is designed to provide students with advanced instruction in reporting, writing, and production for a television news program. Students will take on important roles in 15- and 30-minute news broadcasts and refine their skills in shooting and editing video. The goal of this course is to produce weekly news programs worthy of broadcast on local television. Students will receive significant experience in front of the camera as news, sports, and entertainment anchors/reporters as well as leadership positions in the television studio during the live broadcasts. Prerequisites: COMM 387, THEA 387 or ENGL 387.

COMM 489/589. Health and Interpersonal Communication. 3 Credits.
This course is designed to give an overview of contemporary scholarship on phenomena within the scope of interpersonal health communication. Prerequisite: Instructor permission required.

COMM 491/591. Communication and Activism. 3 Credits.
This course will delve into activism and social change from a local and global perspective in order to enhance students' perspectives of social change as it manifests via popular media and community action. Prerequisite: Instructor permission required.

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COMM 492. Cinematography 2. 3 Credits.
This course builds on the fundamentals learned in Cinematography 1, exploring advanced camera and lighting techniques primarily used in narrative cinema. Advanced cameras, grip, electric, and lighting equipment will be covered, exposing students to gear and practices beyond the scope of a standard student production. This is a production class. Prerequisite: COMM 385 or THEA 385.

COMM 493. Feature Film Production. 6 Credits.
This intensive course will bring students onto the set of a Feature Film Production, working crew positions as the film is shot. Cross-listed with THEA 493. Prerequisites: COMM 271/THEA 271/DCAN 271 and two of the following: COMM 380/THEA 380, COMM 383/THEA 383, COMM 385/THEA 385, COMM 386/THEA 386, COMM 389/THEA 389, COMM 483/THEA 483, COMM 480/THEA 486, COMM 492/THEA 492 with a grade of C or better.

COMM 494. Entrepreneurship and Public Relations. 3 Credits.
This course is designed to help students enhance their personal and professional development through innovation guided by faculty members and professionals, while at the same time, meeting a critical need for Old Dominion University. Through a partnership with ODU’s Office of Strategic Communication and Marketing, a select group of upper-level public relations, marketing or related discipline students will work, individually and in teams, as a “bureau” for the University’s central marketing and communications office. Prerequisite: COMM 303 or equivalent.

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.

CPS - Center for Professional Studies

CENTER FOR PROFESSIONAL STUDIES Courses

CPS 368. Internship in Professional Studies. 1-6 Credits.
An opportunity to integrate service and applied learning experience with leadership perspectives. Prerequisite: junior standing.

CPS 395. Topics. 1-3 Credits.
The study of selected topics which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule. Prerequisite: junior standing or permission of the instructor.

CPS 397. Independent Study. 1-6 Credits.
Independent reading and study on a topic to be selected under the direction of an instructor. Prerequisite: Permission of instructor.

CPS 398. Independent Study. 1-6 Credits.
Independent reading and study on a topic to be selected under the direction of an instructor. Prerequisites: Permission of instructor.

CPS 400. Foundations of Leadership. 3 Credits.
This course is designed to provide students with a basic introduction to leadership, with a focus on leadership history, leadership styles, traits, and skills. The differences between managers and leaders will be explored. Prerequisite: junior standing or permission of the instructor.

CPS 406. Cyber Law. 3 Credits.
This course tackles two major cyber law subjects. The first part of the course examines various U.S. laws and legal considerations that impact the digital and cyberspace worlds from traditional civil, and to a lesser extent, traditional criminal perspectives. The second part will familiarize cyber operations professionals about the extent of and limitations on their authorities to ensure operations in cyberspace are in compliance with U.S. law, regulations, directives and policies. The course will also introduce students to miscellaneous cybersecurity topics such as the Federal Acquisition Requirements. Prerequisite: junior standing.

CPS 410. Leadership Ethics. 3 Credits.
This course examines how ethical principles can be used to guide effective leadership practices. Students will gain an understanding of how ethical principles in the workplace have developed over time. They will also explore the connections between individual ethics and workplace behaviors, in addition to leadership strategies that promote ethical behavior by workers. Prerequisite: junior standing or permission of the instructor.

CPS 412. Leadership and Law. 3 Credits.
This course addresses leadership in public, private, and non-profit organizations relative to laws that impact such organizations. Students will examine their role as leaders within legal systems that influence business operations such as employment law, intellectual property, antitrust, white collar crime, and bankruptcy. Prerequisite: junior standing or permission of the instructor.

CPS 414. Design Thinking for Leaders. 3 Credits.
Design thinking is a human-centered approach to problem solving and innovation. With design thinking one can confidently generate solutions to problems in organizations or to launching a new product or enterprise. It is being used by leaders for developing meaningful and useful responses to contemporary challenges. In this course, an overview of design thinking is provided, along with a model containing key questions and tools to help leaders understand design thinking as a problem solving approach. Prerequisites: junior standing or permission of the instructor.

CPS 415. Women in Leadership. 3 Credits.
This course provides students with the opportunity to explore the top female leaders of the present day. The course examines the difference between male and female leaders in business/economics, politics, entertainment, and government. Leadership styles will be explored. Prerequisite: junior standing or permission of the instructor.

CPS 416. Trends and Issues in Leadership. 3 Credits.
This course is focused on examining and expanding on the application of leadership principles and decision making. It is designed to have students step out of their comfort zones and look at leadership issues from various sides. The course will provide background and learning on primary leadership concepts with ethics ideals sprinkled within the content. Students will be challenged to find articles and examples for leadership application in multiple business, industry, government, and societal realms, taking on both protagonist and antagonist roles in the examination of the issues. Prerequisite: junior standing 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 326. LGBTQ People, Crime, and Justice. 3 Credits.
Learning appropriate terminology to discuss LGBTQ individuals, as well as a review of the social issues facing these populations, including damaging cultural stereotypes. Critically exploring the history of interactions between LGBTQ communities and agents of formal control, such as schools and the police, including responses to bullying and bias crimes. Interrogating how changing political and social contexts affect policy regarding formal responses to LGBTQ communities. Prerequisite: SOC 201S or CRJS 215S.

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 356. Gangs. 3 Credits.
This course seeks to evaluate issues central to the study of modern gangs, such as gang definitions, prevalence, proliferation, migration, formation, histories, and gang/gang member characteristics. Another objective is to understand why and how young people both join and leave their gangs and explore how gang structure and organization can influence gang and gang member behavior, including their involvement in violence, other illegal acts, their victimization, and the gendered experiences of female gang members. Students will also review assess policies and efforts regarding gang prevention, intervention, and suppression and distinguish between stereotypes/myths and realities about gangs and gang members based on empirical research and theory. Prerequisite: SOC 201S or CRJS 215S.

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 Development Services prior to the semester in which the work experience is to take place. Available for pass/fail grading only. Prerequisites: Approval of the department and Career Development Services 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. Prerequisites: Approval by the department internship director.

CRJS 369. Practicum. 3-6 Credits.
Field experience in a criminal justice area. Prerequisites: Permission of the department chair.

CRJS 370. State Crime. 3 Credits.
This course explores state crime from a sociological and criminological perspective. It examines historical and current cases of governmental crime at home and abroad. It also explores the intertwining of states with other states, corporations, and, when applicable, international financial institutions as well as their roles in facilitating or constraining acts of state crime. Finally, the class discusses the problems of control, domestically and internationally. Prerequisites: CRJS 215S or permission of the instructor.

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. 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 405. Cybercrime and Cybersecurity. 3 Credits.
This course will provide students with an overview of computer-related crimes and how law enforcement officials investigate them. The course begins by describing the environment that has been created through information and communication technologies, and how this new environment facilitates different types of behavior. The course then moves into defining and describing the different types of computer-related crimes, the techniques used by officials, and the legal issues inherent in combating cybercrime. Prerequisites: CRJS 215S.

CRJS 406. Cyber Law. 3 Credits.
This course tackles two major cyber law subjects. The first part of the course examines various U.S. laws and legal considerations that impact the digital and cyberspace worlds from traditional civil, and to a lesser extent, traditional criminal perspectives. The second part will familiarize cyber operations professionals about the extent of and limitations on their authorities to ensure operations in cyberspace are in compliance with U.S. law, regulations, directives and policies. The course will also introduce students to miscellaneous cybersecurity topics such as the Federal Acquisition Requirements. Cross-listed with CYSE 406 and CPS 406. Prerequisite: CRJS 262 or junior standing.

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 Wayne of Knowing or permission of the instructor.

CRJS 409. Crime and Computer Applications. 3 Credits.
The purpose of this interdisciplinary course is to introduce students to the ways in which computers are involved in the commission and the investigation of crime. Students will learn the fundamentals of cryptography and steganography and the tools used to perform these activities. Students will also use forensic software to identify, gather, and verify relevant digital evidence. Cross-listed with CYSE 409. Prerequisite: CRJS 405 or permission of the instructor.

CRJS 410. 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 419. Animals and Society. 3 Credits.
This is a class about the role of nonhuman animals in society. Animals are used to entertain, to do work, to provide companionship, to provide food, and more. In this class, we discuss the causes and consequences of both individual and institutional animal abuse. Society's relation to wildlife is also an important component and includes poaching, sport and trophy hunting, and society's reaction to wolves, coyotes, and wild horses in the West. Cross-listed with SOC 419. Prerequisite: SOC 201S or CRJS 215S.
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 423. Public Policy in Criminal Justice. 3 Credits.
A study of the nature, development, and utilization of public policy within agencies of the criminal justice system. Topics include policy formulation, constraints on policy makers, influence of constituencies, and the role of research information. Case studies of issues such as crime control, prison overcrowding, police use of deadly force, the death penalty and parole guidelines will be undertaken. Prerequisite: CRJS 215S.

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 431. Serial Offenders. 3 Credits.
This course explores the topic of serial offenders, also referred to as repeat offenders, recidivists, and career criminals. The course begins with an overview and discussion of patterns of crime, followed by a discussion of relevant theoretical perspectives. We also discuss profiling and the role it can play in the investigation of serial crimes. Next, we move into modules devoted to specific types of crime (arson, rape, homicide, etc.), and discuss the research on serial offenders in each group. Finally, prevention, as well as social policy issues, are addressed. 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 445. Workplace Law and Society. 3 Credits.
This course examines the laws of the workplace from a sociological and issue-driven approach considering two perspectives – both employer and employee. Relevant laws are identified, explored and made relevant through examples of their application in real-world situations. Sometimes the wisdom of these laws will be challenged; students will be encouraged to raise questions about a law’s utility, justice or fairness, whether in principle or in application. Prerequisite: Junior standing.

CRJS 448. 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 451. Race, Ethnicity, Crime and Justice. 3 Credits.
This course will examine the intersectionality of race, ethnicity, crime, justice and the operation of the criminal justice system and will critically assess controversial issues surrounding race, ethnicity, crime, and justice. Students will discuss contemporary social justice issues as they relate to race, ethnicity, crime, and justice. The theoretical frameworks that explain the intersection between race, ethnicity, crime and justice will be examined. The course will also investigate the broad range of policy issues and recommendations impacting communities of color and the administration of criminal and social justice. Prerequisite: CRJS 215S or SOC 201S.

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 494. Entrepreneurship in Sociology/Criminal Justice. 3 Credits.
This course is designed to help students enhance their personal and professional development through innovation guided by faculty members and professionals. It offers students an opportunity to integrate disciplinary theory and knowledge through developing a nonprofit program, product, business, or other initiative. The real-world experiences that entrepreneurship provides will help students understand how academic knowledge leads to transformations, innovations, and solutions to different types of problems. The course can be delivered either as an independent project for individual students or as group projects similar to those sometimes offered in topics courses. Prerequisite: junior standing.

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. Independent Study. 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.

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 112. Information Literacy for Former Engineering Majors. 1 Credit.
The objective of this course is to enhance the ability of students to locate,
manage, critically evaluate, and use information for problem solving,
research, and decision making in a complex digital world. Emphasis in
this course will be on information security, laws, regulations, institutional
policies and ethical issues surrounding the access and use of information.
Prerequisites: CEE 111 or ECE 111 or ENGT 111 or MAE 111 or
MSIM 111.

CS 120G. Introduction to Information Literacy and Research. 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.
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.
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.
Prerequisites: MATH 102M or MATH 103M and a grade of C or better in
CS 150 or ENGN 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.
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. Prerequisites: CS 150 or ENGN 150 with
a grade of C or better. Pre- or corequisite: CS 252.

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
333, ENGN 150 or IT 205.

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.
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.
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. Prerequisites: ENGL 110C.

CS 312. Internet Concepts. 3 Credits.
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. Prerequisites: CS 252.

CS 330. Object-Oriented Programming and Design. 3 Credits.
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,
synchronization, and graphic user interfaces. Prerequisites: MATH 163,
CS 252 and a grade of C or better in CS 250 or CS 333.
CS 334. Computer Architecture Fundamentals. 4 Credits.
Topics include: number representation, base conversion, Boolean algebra, combinatorial circuits, arithmetic units, registers, memory, hardwired 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 CS 270. This web-based course requires considerable maturity and independent responsibility on the part of the student. Prerequisites: MATH 163 and a grade of C or better in CS 150 (or an equivalent course in a high level language).

CS 350. Introduction to Software Engineering. 3 Credits.
Laboratory work required. An exploration of the software development process, with an emphasis on the tools and techniques that support project teams. Topics include: software development process models, requirements, automated testing, documentation, build, version and configuration management, issue tracking, and agile methods. The course requires each student to participate as a member of a project team and to demonstrate proficiency with a variety of development tools. Prerequisites: CS 252 and a grade of C or better in CS 330 or CS 361.

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. Data Structures and Algorithms. 3 Credits.
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. Prerequisites: MATH 163, CS 252 and a grade of C or better in CS 250 or CS 333.

CS 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 Development Services prior to the semester in which the work experience is to take place. Written report required. Prerequisites: approval by the CS Department and Career Development Services in accordance with the policy for granting credit for Cooperative Education programs.

CS 368. Computer Science 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. An academic project may be required by the department to enhance the value of the educational experience. Written report required. Prerequisites: approval by CS Department and Career Development Services.

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, CS 333, or ENGN 150.

CS 382. Introduction to JAVA. 1 Credit.
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. Prerequisites: A grade of C or better in CS 250 or CS 333.

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.
Special topics in computer science that are not part of the current curriculum at the junior/senior level. Prerequisite: permission of the instructor.

CS 402/502. Formal Software Foundations. 3 Credits.
Laboratory work required. Foundational principles and techniques for building correct-by-construction software systems with provable guarantees. Includes functional programming, algebraic and polymorphic data types, pattern matching, computer-assisted theorem proving, proof automation, extraction of certified executable code, examples of verified algorithms. Prerequisite: CS 381.

CS 410/510. Professional Workforce Development I. 3 Credits.
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 grant draft proposal. Prerequisites: A grade of C or better in CS 300T and CS 350.

CS 411W/511. Professional Workforce Development II. 3 Credits.
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. This is a writing intensive course. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C and a grade of C or better in CS 330 and CS 410.

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.
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. Prerequisites: A grade of C or better in CS 312 and CS 330.

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 432/532. Web Science. 3 Credits.
Provides an overview of the World Wide Web and associated decentralized information structures, focusing mainly on the computing aspects of the Web: how it works, how it is used, and how it can be analyzed. Students will examine a number of topics including: web architecture, web characterization and analysis, web archiving, Web 2.0, social networks, collective intelligence, search engines, web mining, information diffusion on the web, and the Semantic Web. Prerequisites: A grade of C or better in CS 361 and CS 330.
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: CS 252 and a grade of C or better in CS 381 and either CS 330 or CS 361.

CS 451/551. Software Engineering Survey. 3 Credits.
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. Prerequisites: A grade of C or better in CS 330 or CS 361.

CS 454/554. Network Management. 3 Credits.
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. Prerequisites: A grade of C or better in CS 455.

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 458/558. Unix System Administration. 3 Credits.
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. Prerequisites: experience with UNIX.

CS 460/560. Computer Graphics. 3 Credits.
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. Prerequisites: A grade of C or better in CS 361.

CS 462/562. Cybersecurity Fundamentals. 3 Credits.
Introduction to networking and the Internet protocol stack; Vulnerable protocols such as HTTP, DNS, and BGP; Overview of wireless communications, vulnerabilities, and security protocols; Introduction to cryptography; Discussion of cyber threats and defenses; Firewalls and IDS/IPS; Kerberos; Transport Layer Security, including certificates; Network Layer Security. Prerequisites: MATH 162M.

CS 463/563. Cryptography for Cybersecurity. 3 Credits.
This course covers 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; and cryptographic algorithms—DES, AES, stream ciphers, hash functions, digital signatures, etc. Prerequisites: MATH 162M.

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. Prerequisites: MATH 162M.

CS 465/565. Information Assurance. 3 Credits.
Introduction to information assurance. Topics to be covered include metrics, planning and deployment; identity and trust technologies; verification and evaluation, and incident response; human factors; regulation, policy languages, and enforcement; legal, ethical, and social implications; privacy and security trade-offs; system survivability; intrusion detection; and fault and security management. Prerequisites: MATH 162M and familiarity with computer security area.

CS 466/566. Principles and Practice of Cyber Defense. 3 Credits.
This course is designed to help students gain a thorough understanding of vulnerabilities and attacks in systems and networks and learn cyber defense best practices. It covers fundamental security design principles and defense strategies and security tools used to mitigate various cyber attacks. The topics may include identification of Recon Ops, intrusion detection, identification of C2 Ops, data exfiltration detection, identifying malicious codes, network security techniques, cryptography, malicious activity detection, system security architectures, defense in depth, distributed/cloud and virtualization. Laboratory work required. Prerequisites: CS 250, CS 270 and CS 455; no prior knowledge of computer security is necessary.

CS 467/567. Introduction to Reverse Software Engineering. 3 Credits.
Laboratory work required. Covers all the major components such as static analysis, dynamic analysis, Windows x86/64 Assembly, APIs, DLL/ process injection, covert launching methods, behaviors, anti-disassembly, anti-VM, packing/unpacking, shell code, C++, buffer overflow attacks and various kinds of networking attacks; includes a final project that analyzes a piece of real malware. Prerequisites: CS 250 and CS 270.

CS 468W. Research Methods in Mathematics 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 scientific results. Students will perform four independent inquiries, combining skills from mathematics and science to solve research problems. Required for Physics teaching licensure track; not available as upper-division elective in content area. This is a writing intensive course. Prerequisites: Admission to the Monarch Teach Program; CS 361 or MATH 212; and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

CS 471. Operating Systems. 3 Credits.
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. Prerequisites: A grade of C or better in CS 361 and CS 270 or ECE 346 or ECE 443.

CS 472. Network and Systems Security. 3 Credits.
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. Prerequisites: A grade of C or better in CS 361.

CS 475/575. Introduction to Computer Simulation. 3 Credits.
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. Prerequisites: STAT 330 and a grade of C or better in CS 330 or CS 361.
CS 476/576. Systems Programming. 3 Credits.
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). Prerequisites: A grade of C or better in CS 330 and CS 361.

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, Delaunay triangulations, binary space partitions, quadtrees, and other topics. Prerequisites: CS 361 and MATH 211.

CS 480/580. Introduction to Artificial Intelligence. 3 Credits.
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. Prerequisites: A grade of C or better in CS 361.

CS 486/586. Introduction to Parallel Computing. 3 Credits.

CS 487. Applied Parallel Computing. 3 Credits.
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. Prerequisites: A grade of C or better in CS 270 and either CS 361 or CS 330; CS 417 or linear algebra is recommended.

CS 488/588. Principles of Compiler Construction. 3 Credits.
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. Prerequisites: A grade of C or better in CS 361.

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.
Independent study under the direction of an instructor. Prerequisites: permission of the instructor.

CSD - Communication Sciences and Disorders

COMMUNICATION SCIENCES AND DISORDERS Courses

CSD 350. Survey in Communication Disorders. 3 Credits.
This course is designed to acquaint student with the discipline of speech-language pathology, and provide introduction to developmental and acquired disorders of speech and language. Prerequisites: Permission of instructor.

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 446. Neural Bases of Communication and Swallowing Disorders. 3 Credits.
The content of this course focuses upon the neurological bases of speech, language, and swallowing, and communication and swallowing disorders that result from acquired neuropathologies affecting the central and peripheral nervous system. Prerequisites: Grade of C- or better in CSD 350 and CSD 351.

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 449W. Disciplinary Writing in Speech-Language Pathology. 3 Credits.
The course provides an introduction to disciplinary writing skills, with an emphasis on clinical reasoning, grammatical categories, and metalinguistic skills designed to facilitate academic editing and language analysis skills required in speech-language pathology. Objectives of this course are achieved using structured and supervised observation activities and through the development of ePortfolios. This is a writing intensive course. Prerequisites: Grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; and grade of C- or better in ENGL 350.

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 350.

CSD 452/552. Voice and Fluency Disorders. 3 Credits.
This content of this course focuses upon the basic tenets related to fluency and voice disorders. The purpose is to introduce students to the basic terminology, concepts of the role of articulation, phonation, and respiration as they relate to both fluency and voice disorders. Diagnosing and treating fluency and voice disorders will be discussed. 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. Prerequisites: Grade of C- or better in CSD 350.

CSD 456. Clinical Skills in Communication Sciences & Disorders. 3 Credits.
In this course, speech-language pathology students will learn practical and foundational clinical implementation skills necessary for professional practice in assessment and intervention for communication sciences and disorders. Prerequisite: CSD 352, CSD 453, and a GPA at least 3.0 in the major.

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. Methods and Materials in Speech-Language Pathology. 3 Credits.
This course introduces students to methods and materials used in assessment and treatment of communication disorders and differences, and introduces augmentative and alternative communication methods utilized in the management of severe communication disorders. Prerequisites: Grade of C- or higher in CSD 350.

CSD 460/560. Hearing Disorders and Basic Audiology. 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, Sign Language and Deaf Culture I. 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.) Prerequisite: Permission of the instructor.

CSD 466, Sign Language and Deaf Culture 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 465.

**CYSE - Cybersecurity**

**CYBERSECURITY Courses**

**CYSE 100, CyberExplorers and University Orientation. 1 Credit.**
This course provides an introduction to cyber hygiene and orientation to university life.

**CYSE 200T, Cybersecurity, Technology, and Society. 3 Credits.**
Students will explore how technology is related to cybersecurity from an interdisciplinary orientation. Attention is given to the way that technologically-driven cybersecurity issues are connected to cultural, political, legal, ethical, and business domains.

**CYSE 250, Basic Cybersecurity Programming and Networking. 3 Credits.**
This course introduces the cybersecurity-centric programming and networking concepts. Students will develop problem solving skills by using low-level programming languages (including C and assembly) and learn fundamentals of network protocols. This course is the technical base for students to take cybersecurity major courses. No prior knowledge of programming and networking is assumed. Prerequisite: MATH 162M or higher.

**CYSE 300, Introduction to Cybersecurity. 3 Credits.**
This course provides an overview of the field of cybersecurity. It covers core cybersecurity topics including computer system architectures, critical infrastructures, cyber threats and vulnerabilities, cryptography, information assurance, network security, and risk assessment and management. Students are expected to become familiar with fundamental security concepts, technologies and practices, and develop a foundation for further study in cybersecurity. Prerequisite: MATH 162M or permission of the instructor.

**CYSE 301, Cybersecurity Techniques and Operations. 3 Credits.**
This course introduces tools and techniques used to secure and analyze large computer networks and systems. Students will explore and map networks using a variety of diagnostic software tools, learn advanced packet analysis, configure firewalls, write intrusion detection rules, perform forensic investigation, and practice techniques for penetration testing. Prerequisite: MATH 162M or permission of the instructor.

**CYSE 368, Cybersecurity Internship. 1-6 Credits.**
This course allows students to volunteer to work in an agency related to cybersecurity. Students must volunteer for 50 hours per course credit and complete course assignments. Prerequisite: approval by the Director of the Center for Cybersecurity Education and Research.

**CYSE 395, Topics in Cybersecurity. 1-3 Credits.**
Study of selected topics in cybersecurity. Prerequisites: junior standing.

**CYSE 404, Law and Digital Forensics. 3 Credits.**
This course will focus on the intersection of digital forensics and the criminal justice system, namely how digital forensics is understood and applied to key criminal justice, constitutional and statutory considerations within the criminal justice system. Students will explore such topics as the nature and types of cybercrime; search and seizure principles in the digital world; finding, handling and maintaining chain of custody of digital evidence; interviewing individuals relating to digital evidence and related activities; and testifying in court about digital evidence matters. Prerequisites: Junior standing or permission of instructor.

**CYSE 406, Cyber Law. 3 Credits.**
This course tackles two major cyber law subjects. The first part of the course examines various U.S. laws and legal considerations that impact the digital and cyberspace worlds from traditional civil, and to a lesser extent, traditional criminal perspectives. The second part will familiarize cyber operations professionals about the extent of and limitations on their authorities to ensure operations in cyberspace are in compliance with U.S. law, regulations, directives and policies. The course will also introduce students to miscellaneous cybersecurity topics such as the Federal Acquisition Requirements. Prerequisite: junior standing.

**CYSE 407, Digital Forensics. 3 Credits.**
This course introduces the basic concepts and technologies of digital forensics. Students will learn the fundamental techniques and tools utilized for collecting, processing, and preserving digital evidence on computers, mobile devices, networks, and cloud computing environments. Students will also engage in oral and written communication to report digital forensic findings and prepare court presentation materials. Prerequisites: declared major and junior standing.

**CYSE 409, Crime and Computer Applications. 3 Credits.**
The purpose of this interdisciplinary course is to introduce students to the ways in which computers are involved in the commission and the investigation of crime. Students will learn the fundamentals of cryptography and steganography and the tools used to perform these activities. Students will also use forensic software to identify, gather, and verify relevant digital evidence. Cross-listed with CRJS 409. Prerequisite: CRJS 405 or permission of instructor.

**CYSE 416/516, Cyber Defense Fundamentals. 3 Credits.**
This course focuses on cybersecurity theory, information protection and assurance, and computer systems and networks security. The objectives are to understand the basic security models and concepts, learn fundamental knowledge and tools for building, analyzing, and attacking modern security systems, and gain hands-on experience in cryptographic algorithms, security fundamental principles, and Internet security protocol and standards. Prerequisite: ECE 355 or equivalent or permission of the instructor.

**CYSE 417, Digital Leadership. 3 Credits.**
This course explores technology as it relates to leadership experiences. Theories, case studies and real world examples are analyzed to show both successful and unsuccessful uses of online and digital approaches that inform leaders' communication strategies. Students will explore how their own digital identities may impact their futures as leaders. They will also learn how to create digital identities that will shape their professional identities throughout their careers. Prerequisites: Junior standing or permission of instructor.

**CYSE 419/519, Cyber Physical System Security. 3 Credits.**
Cyber Physical Systems (CPS) integrate computing, networking, and physical processes. The objectives of this course are to learn the basic concepts, technologies and applications of CPS, understand the fundamental CPS security challenges and national security impact, and gain hands-on experience in CPS infrastructures, critical vulnerabilities, and practical countermeasures. Prerequisite: ECE 355 or permission of the instructor.
CYSE 425W. Cybersecurity Strategy and Policy. 3 Credits.
This writing intensive course explores cybersecurity policy and strategy and introduces students to the essentials of strategy development and policy making in cybersecurity. Topics considered include planning principles in cyber strategy; risk management and cybersecurity policy; the connections between cybersecurity policies, businesses, and governmental institutions; the knowledge, skills, and abilities needed to develop and implement cybersecurity policy; the social, political and ethical implications that arise in cybersecurity policies and strategies; strategies to assess cybersecurity policy; and the ties between national security and cybersecurity policy. Prerequisites: ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better and CYSE 200T or POLS 101S.

CYSE 494. Entrepreneurship in Cybersecurity. 3 Credits.
This course is designed to help students enhance their personal and professional development through innovation guided by faculty members and professionals. It offers students an opportunity to integrate disciplinary theory and knowledge through developing a nonprofit program, product, business, or other initiative. The real-world experiences that entrepreneurs provide will help students understand how academic knowledge leads to transformations, innovations, and solutions to different types of problems. The course can be delivered either as an independent project for individual students or as group projects similar to those sometimes offered in topics courses. Prerequisite: Approval by the Director of the Center for Cybersecurity Education and Research.

CYSE 495/595. Topics in Cybersecurity. 1-3 Credits.
The advanced study of selected cybersecurity topics designed to permit small groups of qualified students to work on subjects of mutual interest. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisite: permission of the instructor.

CYSE 496/596. Topics in Cybersecurity. 1-3 Credits.
The advanced study of selected cybersecurity topics designed to permit small groups of qualified students to work on subjects of mutual interest. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisite: permission of the instructor.

CYSE 497/597. Tutorial Work in Special Topics in Cybersecurity. 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 Director of the Center for Cybersecurity Education and Research.

CYSE 498/598. Tutorial Work in Special Topics in Cybersecurity. 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 Director of the Center for Cybersecurity Education and Research.

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 MLS 401) Prerequisites: junior standing. 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. 4 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. Prerequisites: Admission to the cytotechnology program. Pre- or corequisite: CYTO 405 and CYTO 415.

CYTO 428W. Cytopreparatory Techniques and Procedures. 3 Credits.
Introduction to collection, processing and preparation of cytologic specimens from all body sites and general laboratory procedures and regulations. A portion of this course consists of practical experience acquired in the laboratory. Practical experience will be perfected during clinical site rotations throughout the Cytotechnology Program. Students will learn how to properly write lab reports and papers related to health science fields.

This is a writing intensive course. Prerequisites: Pre-admission to the Cytotechnology Program or Program Director permission; completion of ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or higher.

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, infections, 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. 2 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. Prerequisite: CYTO 407. Pre- or corequisite: CYTO 405 and CYTO 415.

CYTO 446. Body Fluids Cytology. 3 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. Prerequisite: CYTO 407. Pre- or corequisite: CYTO 405 and CYTO 415.

CYTO 448. Non-Epithelial Cytology. 1 Credit.
Study of the pathology and cytology of non-epithelial lesions with emphasis on benign, inflammatory, and malignant conditions. Prerequisites: Admission to the cytotechnology program. Pre- or corequisite: CYTO 405, CYTO 415, CYTO 424, CYTO 444, CYTO 445, and CYTO 446.
DANC 185A. Introduction to Dance Technique. 1 Credit.
This course is designed to acquaint students with the components of theatrical dance performance, its historical and ethnic origins, its role as a research paper are required. Prerequisites: permission of the program director.

DANC 232. Ballroom Dance 2. 1 Credit.
This class is a continuation of 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. This class is open to single 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 will be covered. Focus is on rhythm, technique, leading and following. This class is open to single 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 will be covered. Focus is on rhythm, technique, leading and following. This class is open to single 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 II. 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 I. 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 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 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.

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 311 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.
Introduction to jazz dance technique. Prerequisites: DANC 201 or DANC 211 or DANC 260 or permission of instructor.

DANC 322. Jazz Dance 2. 1 Credit.
Continuation of jazz dance technique. Prerequisites: DANC 321 or permission of the instructor.

DANC 330. Extreme Moves (Conditioning for Dancers). 2 Credits.
This course explores the extended physical technique known as Extreme Moves. The Extreme Moves training method focuses on the body's alignment with regard to how forces are present, how they act upon it, and how to build strength to resist or collaborate with these forces. Students will work with props such as large physio balls, elastic bands, mats and the wall in order to improve their core strength, balance, upper and lower body strength and alignments. Through physical practice, readings and videos, students will learn the conceptual framework for Extreme Moves. Prerequisite: Junior standing or permission of the instructor.

DANC 341. Pilates Equipment Lab 1. 2 Credits.
This course will focus on learning beginning and some intermediate exercises on the Pilates equipment, which includes the Reformer, Cadillac, Lo Chair and Magic Circle. Prerequisites: DANC 241.

DANC 342. Pilates Equipment Lab 2. 2 Credits.
This course will focus on learning intermediate and some advanced exercises on the Pilates equipment, which includes the Reformer, Cadillac, Low Chair and Magic Circle. Prerequisite: DANC 341.

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 361. Hip Hop Dance & Culture 1. 2 Credits.
This course will explore hip hop dance and culture from several points of entry: movement, historical, political, aesthetic, sonic, and geographical. The historical focus of the course locates hip-hop dance as a personal, interactive, and cultural expression. Students will navigate through the evolution of hip hop dance and culture from its birthplace in the Bronx, NY through its development into a global phenomenon. The course will discuss the elements of hip hop culture: DJ, B-Boy/Girl, Graffiti Art, MC, and Beat Box, and how they intersect. Students will explore how hip-hop influences and is influenced by geopolitics, race, gender, and other social structures. Prerequisites: DANC 261.

DANC 362. Hip Hop Dance & Culture 2. 2 Credits.
This course will continue to explore hip hop dance and culture from several points of entry: movement, historical, political, aesthetic, sonic, and geographical. The historical focus of the course locates hip-hop dance as a personal, interactive, and cultural expression. Students will navigate deeper through the evolution of hip hop dance and culture from its birthplace in the Bronx, NY through its development into a global phenomenon. The course will continue its discussion on the elements of hip hop culture: DJ, B-Boy/Girl, Graffiti Art, MC, and Beat Box, and how they intersect. Students will continue to explore how hip-hop influences and is influenced by geopolitics, race, gender, and other social structures. Prerequisites: DANC 361.

DANC 366. 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 Development Services prior to the semester in which the work experience takes place. Available for pass/fail grading only. Prerequisites: Approval of the department and Career Development Services.

DANC 368. Internship. 1-3 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. Prerequisites: Approval of department chair and Career Development Services.

DANC 369. Practicum. 1-3 Credits.
Field experience in dance. 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 390 or equivalent (DANC 312, DANC 313, DANC 414, DANC 415, DANC 416).

DANC 373. Production/Performance Lab. 1 Credit.
This course provides students opportunities to participate in productions in Theatre, Dance or Film. These positions provide hands-on experience in the discipline. Cross-listed with THEA 373. Prerequisite: Junior standing or permission of the instructor.

DANC 374. Production/Performance Lab. 1 Credit.
This course provides students opportunities to participate in productions in Theatre, Dance or Film. These positions provide hands-on experience in the discipline. Cross-listed with THEA 374. Prerequisite: Junior standing 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 390. Improvisation. 3 Credits.  
An exploration of creativity through structured exercises, games and problems. Students participate in experiential 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 artists, performers, and observers. Cross-listed with THEA 390. Prerequisite: Junior standing 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. 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 400. Dance Technique: Extended Learning. 0 Credits.  
This course is intended for dance majors who have completed all required courses in dance technique. This course will enable dancers to maintain and continue to improve technical proficiency until graduating. Prerequisites: Must have passed all dance technique required for the degree and 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 473. Production/Performance Lab. 1 Credit.  
This course provides students opportunities to participate in productions in Theatre, Dance or Film. These positions provide hands-on experience in the discipline. Cross-listed with THEA 473. Prerequisite: Junior standing or permission of the instructor.

DANC 474. Production/Performance Lab. 1 Credit.  
This course provides students opportunities to participate in productions in Theatre, Dance or Film. These positions provide hands-on experience in the discipline. Cross-listed with THEA 474. Prerequisite: Junior standing 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. 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, dental hygiene instrumentation, oral health instruction, treatment planning and ethical decision making. (offered fall) Corequisite: DNTH 301. Prerequisite: junior standing. Pre- or corequisite: DNTH 302 and DNTH 304.
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. Pre- or corequisite: DNTH 300 and DNTH 302.

DNTH 302. Oral Anatomy and Histology. 3 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. Prerequisites: BIOL 240 or BIOL 250 and BIOL 241 or 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. 3 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). Corequisite: DNTH 305. Prerequisites: DNTH 300, DNTH 301 and DNTH 304.

DNTH 307. Pharmacology and Medical Emergencies. 3 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 may 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 240 or BIOL 250 and BIOL 241 or BIOL 251 or equivalent.

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 and technologies using the dental hygiene process of care. (offered summer) Prerequisites: DNTH 305, DNTH 306, DNTH 307 and DNTH 309.

DNTH 317. Anxiety and Pain Control. 2 Credits.

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 intra/interprofessional clinical application and development of competencies for the treatment of diverse, special needs and periodontally involved patients using the dental hygiene process of care. (offered fall) 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. This is a writing intensive course. (Offered summer) Prerequisites: grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C and admission into the dental hygiene program.

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: admission to the dental hygiene program.
DNTH 415/515. Research Methods in the Health Sciences. 3 Credits.
Designated to develop skills in scientific methods, evidence-based decision-making and critical analysis of research findings. Emphasis on types of research, types 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 performance 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: Admission to the dental hygiene program.

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. Corequisite: DNTH 418. 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 intra/interprofessional development of competencies for the treatment of periodontally involved, special needs and diverse patients. Offered spring. Prerequisites: Admission to the dental hygiene program. 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 evidence-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 410.

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: sophomore standing and permission of the instructor.

DNTH 450. International Dental Hygiene. 1-3 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 316.

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, creating an ergonomically sound work space, alternative sitting and standing techniques during clinical care, types of disorders and injuries, risk management, comprehension and demonstration of full body exercises with emphasis on core strength training, and self-monitoring. (Offered online summer session 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; Kirchoff’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, summer) Prerequisites: ECE 111 or equivalent and a grade of C or better in MATH 212. Pre- or corequisite: PHYS 232N or PHYS 262N.

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 280 or 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 or ENGN 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 programming skills to design, build, and test electrical networks interfacing to an Arduino Uno 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 or ENGN 150 and ECE 201. Pre- or corequisite: ECE 202.

ECE 300. Math Review for Graduate Engineering Analysis. 3 Credits.
Complex algebra, linear algebra and matrix methods, aspects of multivariable calculus, Boolean logic and numbering systems, differential equations, Laplace transforms, and aspects of probability. Applications and examples in the field of electrical engineering will be used. The use of Matlab in engineering problem solving will be presented. Course not available to ECE undergraduate majors. Prerequisites: Departmental approval.

ECE 301. Review of Electrical Engineering Analysis. 3 Credits.
Electrical engineering problems, including time-domain and frequency-domain circuit analysis, analysis of networks with electronic components. The use of Matlab and Simulink in electrical engineering problem solving will be presented. Course not available to ECE undergraduate majors. Prerequisites: Departmental approval.

ECE 302. Linear System Analysis. 3 Credits.
This course covers the fundamental concepts of signal and linear system representation and analysis in continuous time. Topics include: Operations with sinusoids and complex exponentials. Signal properties, operations, and models. System properties, classification, and models. Time-domain system analysis, including impulse response, total system response, stability, and convolution. Fourier analysis of continuous-time signals and signal transmission through linear time-invariant systems. Ideal and practical filters. Advanced matrix operations and linear algebra with applications to signal and system analysis. Characteristic equation of a matrix, eigenvalues and eigenvectors. Performing time and frequency domain analysis using MATLAB. (offered fall, spring). Prerequisites: MATH 280 or MATH 307 and a grade of C or better in ECE 202. Pre- or corequisite: ECE 287.

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. Applications include modeling of physical systems, data analysis, communications, designed engineering experiments, control charts, and hypothesis testing. 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 and ECE 287. Pre- or corequisite: ECE 241.

ECE 323. Electromagnetics. 3 Credits.
This course provides an introduction to the basic concepts of electromagnetics. Topics include math fundamentals for electromagnetic studies, Maxwell’s equations, electromagnetic waves, polarization, wave propagation in various media and across interfaces, waveguides and transmission lines. This fundamental course is to build an electrical engineering/physics foundation for students and enable them to identify, formulate, and solve future engineering problems. Prerequisites: MATH 285 or MATH 312 and a grade of C or better in ECE 202 and ECE 287.

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 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 are reviewed. (offered fall and spring) Prerequisites: a grade of C or better in ECE 202 and in ECE 287.

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. (offered fall) Prerequisites: ECE 304 and a grade of C or better in ECE 241.

ECE 368. Student Internship/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 Development Services prior to the semester in which the work experience is to take place. (offered fall, spring, summer) Prerequisites: Approval by department and Career Development Services.

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 and spring) Prerequisites: ECE 302 and a grade of C or better in ECE 241.
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 fall and spring). Prerequisites: ECE 332.

ECE 395. Topics in Electrical and Computer Engineering. 1-3 Credits.
Study of topics in electrical and computer engineering. Prerequisites: departmental approval.

ECE 396. Topics in Electrical and Computer Engineering. 1-3 Credits.
Study of 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. (offered spring) Prerequisites: ECE 303 and a grade of C or better in ECE 202 and ECE 287.

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. (offered fall) Prerequisites: ECE 303 and a grade of C or better in ECE 202 and 287.

ECE 405/505. Power System Design & Analysis. 3 Credits.
This course covers basic power circuit analysis and introductory power system engineering and focuses on the transmission line design, power flow study, short circuit protection, and power distribution in electric power systems, followed by a survey of several applications and case studies. Prerequisites: ECE 303 and a grade of C or better in ECE 202 and ECE 287, or equivalent knowledge in electric machines and circuits.

ECE 406/506. Introduction to Visualization. 3 Credits.
The course provides a practical treatment of computer graphics and visualization with emphasis on the usage of industry standard application programming interface (API) libraries for modeling and simulation applications. It introduces computer graphics fundamentals, including mathematical foundations, rendering pipeline, geometrical transformations, 3D viewing and projections, lighting and shading, texture mapping, etc. It teaches OpenGL programming for developing interactive visualization for modeling and simulation applications. Unity game engine is utilized to illustrate advanced concepts and techniques. Interactive visualization software architecture for modeling and simulation and visualization principles based on perception is covered in depth with case studies. (cross listed with MSIM 441) Prerequisites: a grade of C or better in CS 250.

ECE 407/507. Introduction to Game Development. 3 Credits.
An exciting introductory course focused on game development theory and practices using Unity game engine with emphasis on educational game development. Topics covered in this course include game architecture, 3D computer graphics theory, content generation, user interaction, graphical user interface, audio, game physics, animation, physics, C# language scripting, 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 platforms, including personal computers, smart phones, and game consoles. (cross listed with MSIM 408/MSIM 508) Prerequisites: CS 361 or equivalent.

ECE 408/508. Fundamentals of Electric Vehicles. 3 Credits.
This course covers the fundamentals of electric vehicles and focuses on the components, power control, energy management, power train dynamics and other related topics in purely electric and hybrid electric vehicle systems, including a survey of several applications and case studies. Prerequisites: ECE 303 and ECE 403, or instructor approval.

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 or equivalent. Pre-or corequisite: MSIM 320 or equivalent.

ECE 411/511. Networked System Security. 3 Credits.
Course presents an overview of theory, techniques and protocols that are used to ensure that networks are able to defend themselves and the end-systems that use networks for data and information communication. Course will also discuss industry-standard network security protocols at application, socket, transport, network, VPN, and link layers, popular network security tools, security, performance modeling and quantification and network penetration testing. Discussion will be based on development of system level models and simulations of networked systems. Crosslisted with MSIM 411. Prerequisites: CS 150 or ENNG 150, and junior standing or permission of the instructor.

ECE 416/516. Cyber Defense Fundamentals. 3 Credits.
This course focuses on cybersecurity theory, information protection and assurance, and computer systems and networks security. The objectives are to understand the basic security models and concepts, learn fundamental knowledge and tools for building, analyzing, and attacking modern security systems, and gain hands-on experience in cryptographic algorithms, security fundamental principles, and Internet security protocol and standards. Prerequisites: ECE 355 or permission of the instructor.

ECE 417/517. Secure and Trusted Operating Systems. 3 Credits.
Course will review typical operating systems developing system models and identifying potential vulnerabilities. Course will discuss policies and their implementation required to fix such vulnerabilities to arrive at a secure and Trusted Computing Base. Course examines the security architecture Security Enhanced Linux (SELinux) Windows and Android OS. Crosslisted with MSIM 417. Prerequisites: MSIM 470 or permission of the instructor.

ECE 419/519. Cyber Physical System Security. 3 Credits.
Cyber Physical Systems (CPS) integrate computing, networking, and physical processes. The objectives of this course are to learn the basic concepts, technologies and applications of CPS, understand the fundamental CPS security challenges and national security impact, and gain hands-on experience in CPS infrastructures, critical vulnerabilities, and practical countermeasures. Prerequisites: ECE 355 or permission of the instructor.

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) 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.

ECE 453/553. 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. (offered spring) Prerequisites: ECE 355 or permission of the instructor.

ECE 454/554. Introduction to Bioelectronics. 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. (offered spring) 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), Virtual Instrument System Architecture (VISA) and universal Service Bus (USB). Analysis of sampled data involving use of probability density function, mean and standard derivations, correlations, and the power spectrum. (offered spring) Prerequisite: ECE 302 or permission of instructor.

ECE 461/561. Automatic Control Systems. 3 Credits.

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 eukaryocytes. 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 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 attack 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. (Cross-listed with MSIM 470) Prereq- or corequisite: MSIM 410 or permission of the instructor.

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) 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 sheet, 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.
This course introduces seniors and first year graduates to the physics and design of optical fiber communication systems. The topics covered are: 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. Prerequisite: ECE 323.

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 and spring) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; ECE 341; ECE 346 and ECE 381. Pre- or corequisite: ECE 313.
ECON 495/595. 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 301S, and 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 200 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 Development Services in the semester prior to enrollment. Credit for internship and practicum in economics may not both be applied to meeting requirements for the major. 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 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 Strome College of Business.
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-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 policy making 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.
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. Prerequisite: MATH 162M.

EET 120. Logic Circuits and Microprocessors. 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. 1 Credit.
Team-oriented experiments in basic combinational and sequential logic circuits and an introduction to fundamental microprocessors. (offered fall) Prerequisite: EET 120.

EET 195. Topics. 1-3 Credits.
Study of selected topics.

EET 200. Electrical Circuits II. 3 Credits.
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. Prerequisites: MATH 163 and a grade of C or better in EET 110. (offered fall).

EET 205. Circuits Laboratory. 1 Credit.
Electrical laboratory instruction including test equipment, measurements, data analysis, verification of circuit laws, formal report preparation, and circuit construction. Pre- or corequisite: EET 200.

EET 210. Electronic Devices and Circuits. 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. EET 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 225. Electronics Laboratory. 1 Credit.
Practical design, construction, testing and troubleshooting of electronic circuits including single state and multistage amplifiers, power amplifiers, linear integrated circuits, and control devices. Prerequisites: EET 205. Pre- or corequisite: EET 210.

EET 261. Introduction to Microprocessors and Microcontrollers. 3 Credits.
Introduction of software and hardware that relates to PIC16FXXX 8 bit microprocessor and microcontroller architectures, interface circuitry, and system designs. Programming in controls of internal and external hardware/ peripherals, communication protocols between the logic circuits, peripherals, and MCUs. The ASM programming and design is the focus and C coding will also be introduced. Pre- or corequisite: EET 120.

EET 295. Topics. 1-3 Credits.
Study of selected topics.

EET 300. Advanced Circuit Analysis. 3 Credits.
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 supports the analytical methods. Prerequisites: MATH 211 and a grade of C or better in EET 200.

EET 310. Digital Electronics. 3 Credits.
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. Prerequisites: EET 120, EET 125, EET 205, and EET 210.

EET 312. Principles of Communication Systems. 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 multiplexing methods. Virtual laboratory projects utilizing simulation software. Prerequisites: EET 300 and ENGT 305.

EET 315. Digital Electronics Laboratory. 2 Credits.
Application-oriented experiments and design problems in digital electronics. Multisim prototype construction requiring system design, module interface, and Engineering Design Journaling. Prerequisites: junior standing. Pre- or corequisite: EET 310.

EET 320. Advanced Microprocessors and Microcontrollers. 3 Credits.
This is the second course in the digital electronics course sequence. The course will focus on software/hardware design of microprocessors and microcontrollers in C under ARM M4 and PIC microcontrollers, interface circuitry, simulation, and system designs in CAD circuit layout. The focus will be on application of microprocessor-based systems design. Prerequisites: EET 261 and EET 310.
EET 325. Microprocessor Laboratory. 2 Credits.
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. Prerequisites: junior standing. Pre- or corequisite: EET 320.

EET 330. Linear Electronics. 3 Credits.
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. Prerequisites: EET 210 and EET 300.

EET 335. Linear Electronics Laboratory. 2 Credits.
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. Prerequisite: junior standing. Pre- or corequisite: EET 330.

EET 340. Transmission Networks. 3 Credits.
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. Prerequisite: EET 300.

EET 350. Fundamentals of Electrical Technology. 3 Credits.
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. Prerequisite: junior standing. Pre- or corequisite: MATH 211.

EET 355. Electrical Laboratory. 1 Credit.
Selected electrical laboratory topics for nonmajors including basic measurements, instrumentation, operational amplifiers, digital circuits, and rotating machines. Not open to electrical engineering technology majors. Prerequisites: junior standing. Pre- or corequisite: EET 350.

EET 360. Electrical Power and Machinery. 3 Credits.
A study of synchronous and asynchronous AC machinery, DC machinery, power distribution systems, and instrumentation. Prerequisite: EET 200 or EET 350.

EET 363. Introduction to PLC. 3 Credits.
Application oriented experiments and design problems in programmable controller setup and programming techniques with emphasis on practical applications. Networking PLCs and HMs. Computer assignments include ladder programs simulation. Students taking this course should not take EET 415. Prerequisite: EET 310 or EET 350.

EET 365W. Electrical Power and Machinery Laboratory. 2 Credits.
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. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; EET 205 or EET 355. Pre- or corequisite: EET 360.

EET 366. Electrical Power and Machinery Laboratory. 1 Credit.
A laboratory course dealing with electrical power and machinery as covered in EET 360. Students taking this lab should not take EET 365W. Prerequisite: EET 205 or EET 355. Pre- or corequisite: EET 360.

EET 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 Development Services prior to the semester in which the work experience is to take place. Prerequisites: approval by the department and Career Development Services in accordance with the policy for granting credit for Cooperative Education programs.

EET 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. Prerequisites: approval by department and Career Development Services.

EET 369. Practicum. 1-3 Credits.
Available for pass/fail grading only. Prerequisites: approval by department and Career Development Services.

EET 370T. Energy and the Environment. 3 Credits.
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. Prerequisite: PHYS 101N or PHYS 111N or PHYS 226N or PHYS 231N.

EET 373. Instrumentation. 3 Credits.
Fundamental concepts of electro-mechanical devices used in mechatronics and automation control systems. The working principles, calibration, interfacing methods and control loops of analog and digital instrumentation devices in a process control system. The instrumentation devices, including sensors, actuators, signal conditioning circuits and data acquisition boards, will be used in class projects as basic feedback control blocks in practical simulation and PLC based mechatronics systems. The simulation projects will use PLC hardware, MATLAB and/or LabView software. Prerequisites: EET 210 and EET 363.

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.
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. Prerequisites: EET 310, EET 320, and EET 325.

EET 405. Introduction to Local Area Networks. 3 Credits.
The course provides an overview of the local area networks (LANs), wide-area networks (WANs), and backbone technologies. It combines the fundamental concepts of data communications and networking with practical applications and emphasizes the OSI reference model and its relationship to traditional and next-generation LAN/WAN technologies, as well as general topics such as network topology, network interface, client/server hardware, bridges and routers. Hands-on activities using Wireshark are included.

EET 410. Communication Principles. 3 Credits.
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. Prerequisite: EET 300 or EET 350.

EET 412. Wireless Communication Systems. 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, cellular networks, wireless standards and satellite communication. System level simulations for determining subsystem design requirements and overall performance. Prerequisites: EET 312.

EET 415. Programmable Machine Controls. 3 Credits.
Application oriented experiments and design problems in programmable controller setup and programming techniques with emphasis on practical applications. Computer assignments include ladder programs simulation. Students taking this course should not take EET 363. Prerequisite: junior standing. Pre- or corequisite: EET 310 or EET 350.

EET 420. Advanced Logic Design. 3 Credits.
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. Prerequisite: EET 310.
EET 430. Automatic Control Systems. 3 Credits.
The study of modern control devices and applications, including electrical, mechanical, and pneumatic systems. Prerequisites: EET 305, EET 330, EET 360, and EET 365W.

EET 440. High Frequency and Microwave Technology. 3 Credits.
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. Prerequisite: EET 340.

EET 460. Communication Systems. 3 Credits.
Overview of the principles of satellite communications, television systems, fiber optics, antennas, and other relevant topics. Prerequisite: EET 410.

EET 470. Microcontroller/Embedded-Based Designs. 3 Credits.
Advanced embedded system designs. Topics focus in ADC, DAC, EEPROM External Memories, temperature sensor, digital RF wireless communications, communications in synchronous and asynchronous serial forms of SCI, SPI, & I2C, and parallel communication in system integration and design. The 32-bit ARM M4 in C code designs will be used in the course. Prerequisites: EET 310, EET 320, and EET 325.

EET 483. Introduction to Smart Grids. 3 Credits.
The course introduces the fundamental principles and techniques in smart grids, with focus on information and communication technologies (ICT) deployed to modernize the electric energy infrastructure. It provides an overview on: the smart grid and its main components; smart devices at transmission, distribution, and customer level; distributed energy resources (DER) and emerging technologies; customer systems, including demand response, home energy management and smart appliances; communications technologies and standards/protocols for the smart grid; and smart distribution and customer system projects from real-world smart grid projects. Prerequisites: EET 360 and ENGT 305.

EET 485. Electrical Power Systems. 3 Credits.
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. Prerequisite: EET 360.

EET 490. Computer-Aided Circuit Simulation. 3 Credits.
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. Prerequisites: EET 300, EET 330, EET 335, and EET 340.

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.
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 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 enables the general student to interpret the distinctive forms and meanings of poems, plays, short stories and long-form fiction, and key notions such as metaphor, metonymy, monologue, irony, satire, and plot as well as race, gender, sexuality, class, region, and religion. Through critical reading, analysis, class and small group discussions, formal essays and examinations, students will develop an understanding of strategies of language use in a variety of Anglophone 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 to properly 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 211C. 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 211C. Prerequisites: ENGL 110C.

ENGL 295. Topics. 1-3 Credits.
A study of selected topics designed for nonmajors or for elective credit within a major. Prerequisite: ENGL 110C with a grade of C or better.

ENGL 300W. 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. 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 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: 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: 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: Literature way of knowing requirement and 6-hour General Education composition requirement 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: Literature way of knowing requirement and 6-hour General Education composition requirement 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 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. Prerequisite: 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. Prerequisite: 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: 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. Prerequisite: 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: Literature way of knowing requirement and 6-hour General Education composition requirement or permission of the instructor.

ENGL 338. Writing for Games. 3 Credits.
A genre course on the aesthetic considerations of writing for games. Students will explore how games translate traditional elements of storytelling such as character, conflict, voice, and plot into effective gameplay. This course will provide students with an opportunity to experiment with composing narratives for a variety of genres of games and game-related productions. It also provide students with practical experience composing game design documents and other industry-specific forms of writing. Prerequisite: six-hour General Education composition requirement or permission of 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: Literature way of knowing requirement and 6-hour General Education composition requirement or permission of the 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: 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: Literature way of knowing requirement and 6-hour General Education composition requirement or permission of the instructor.

ENGL 346. American Literature Since 1860. 3 Credits.
The course explores significant writers and literary movements, which might include naturalism, social realism, modernism, the Harlem Renaissance, post-war confessional poetry, the Civil Rights era, and postmodernism. Prerequisites: Literature way of knowing requirement and 6-hour General Education composition requirement or permission of the 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: 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: Six credit hours of general education composition courses, junior standing or permission of the instructor.
ENGL 351. Fiction Workshop. 3 Credits. Students write, criticize, discuss, and revise works of fiction. Prerequisites: ENGL 300W 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: ENGL 300W 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 355. Game Design and Rhetoric. 3 Credits. Using a number of methodologies privileged by English studies, this course will study the representative and rhetorical strategies through which computer game designers make meaning via their rhetorical choices. Multi-perspective in nature, it will also examine the discursive struggles that determine how players construct themselves as subjects in and against computer games via their rhetorical choices. This course will attempt to come to terms with the larger question of how scholars, through various forms of critical play, construct, categorize, and produce computer games as a subject of academic study. Prerequisites: Literature way of knowing requirement, 6-hour General Education composition requirement, or permission of instructor.

ENGL 360. World Literature 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: Literature way of knowing requirement, 6-hour General Education composition requirement, or permission of instructor.

ENGL 363. World Literature 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: Literature way of knowing requirement, 6-hour General Education composition requirement, 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. Prerequisites: Approval of the department and Career Development Services.

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. Prerequisites: 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: 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: 6-hour general education composition requirement or permission of 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: 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. Prerequisite: 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: 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 383. Digital Journalism. 3 Credits. Students will create a WordPress site and are expected to produce news stories on this site from events on campus and in the community. These news stories may include the use of audio, short video, hyperlinks, infographics, digital maps, and photo galleries. This is a hands-on practical course that will include news reporting and writing for on-line platforms, podcasts, blogs, video, and social media. Students will create a Twitter account and will be expected to Tweet from news events that they will cover. Additionally, in a group project, students will either produce a podcast or a video news story. By the end of the course, students will have marketable digital portfolio. Prerequisites: Grade of C or better in ENGL 110C and either ENGL 211C, ENGL 221C or ENGL 231C.
ENGL 387. TV News Production. 3 Credits.
This course is designed to provide students with an introduction to the reporting, writing, and production aspects of a television news program. Students will learn how to create 15- and 30-minute news broadcasts by developing story ideas and news gathering. Students will also learn the intricacies of 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 television studio cameras. The goal of this course is to produce weekly news programs worthy of broadcast on local television. Students will assume the roles of reporter, writer, producer, floor director, photojournalist, videographer, technician, and more. (Cross listed with COMM 387/THEA 387) Prerequisites: COMM 271 or THEA 271 or COMM 382 or ENGL 382.

ENGL 390. TESL Methods, Materials, & Assessment. 3 Credits.
This course is designed to provide students with the background and tools necessary for teaching English as a Second Language (ESL) at the K-12 or secondary level. The course is divided into three modules. In the first module, students will study the major theories of language learning, focusing primarily on current methods for language learning and teaching. In the second module, attention will be focused on designing a course including consideration of both program goals and students' needs. Finally, the third module addresses practical application of teaching methods through a focus on designing activities, lesson plans and developing assessment tools. Prerequisites: Grade of C or better in ENGL 110C and either ENGL 211C, ENGL 221C, or ENGL 231C.

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: Grade of C or better in ENGL 110C and either ENGL 211C, ENGL 221C, or ENGL 231C.

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. Prerequisite: Three semester hours in literature.

ENGL 406/S06. 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/S07. Chaucer's Canterbury Tales. 3 Credits.
A study of The Canterbury Tales with an introduction to Middle English language and culture. Prerequisite: Three semester hours in literature.

ENGL 416/S16. 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. Prerequisite: One 300-level literature course or permission of instructor.

ENGL 418W/S18. 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. Readings will include 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 110C and a grade of C or better in one of the following: ENGL 211C, ENGL 221C, or ENGL 231C.

ENGL 419/519. The Harlem Renaissance. 3 Credits.
The class provides students with a solid grasp of the Harlem Renaissance: what it was, why it came to be, and how it continues to resonate in American culture. Students will gain a greater understanding of this period and the ways in which the artistic endeavors of the Harlem Renaissance—especially the literature—helped to transform that era and make possible the growing respect for diversity that we now enjoy. Prerequisite: One 300-level literature class or permission of the instructor.

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: 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. Prerequisite: One 300-level literature course or permission of instructor.

ENGL 427W/S27. 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. Prerequisite: 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: One 300-level literature course or permission of instructor.

ENGL 435W/S35. 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: 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. Prerequisite: 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 of world languages. Emphasis is on the analysis of sound systems (phonetics, phonology) and the structure of words and sentences (morphology and syntax). Prerequisites: Junior standing or permission of instructor; previous 300- or 400-level coursework in phonetics or linguistics strongly recommended with ENGL 370 preferred.
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.
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. Prerequisites: ENGL 350 or permission of instructor.

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: Junior standing 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: Junior standing or permission of instructor; previous 300- or 400-level coursework in phonetics or linguistics is strongly recommended with ENGL 370 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. Prerequisite: One 300-level literature course.

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. Prerequisite: One 300-level literature course.

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: Junior standing 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: 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: 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: ENGL 327W or ENGL 351 and junior standing or permission of the instructor, based on writing samples submitted.
ENGL 468. Advanced Writing Internship. 3 Credits.
A structured work experience involving writing and editing in a professional setting. Prerequisites: 15 hours in English, with ENGL 327W or ENGL 334W recommended; permission of department internship coordinator required.

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 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: 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 storytelling—even in the multi-platform, digital age—remains the written word. This course will enable students to develop an understanding of visual storytelling and the production of multimedia news and feature stories. Prerequisites: ENGL 380 and ENGL 382.

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. Prerequisite: ENGL 381 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. Prerequisite: A grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.

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. Prerequisite: 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. Prerequisite: 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. Prerequisite: 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. Prerequisite: One 300-level literature course or permission of the instructor.

ENGL 494. Entrepreneurship in English Studies. 3 Credits.
This course will broach the theoretical and practical questions of how entrepreneurship intersects with English Studies. Conceived of as a studio course, it is designed to teach students a hands-on methodology through which they can translate disciplinary theory and knowledge into real-world outcomes. This course will teach students how academic knowledge can lead to transformations, innovations, and solutions to different types of problems. Prerequisites: Grade of C or better ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.

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. Prerequisite: 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. Prerequisite: 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: 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: Senior standing and approval of the chair of the Department of English.
ENGN - Engineering

ENGINEERING Courses

ENGN 100. Spatial Visualization. 0 Credits.
The course introduces students to spatial visualization/thinking. The objective of the course is to enhance students' ability of thinking in three dimensions. The course covers student experience with spatial visualization/thinking, design and representation, and strategic use. Educational interventions and testing to improve three-dimensional visualization skills are used. The course does not count towards College of Engineering & Technology graduation credit. Prerequisites: Permission of instructor required; enrollment limited to first-year engineering students participating in the Summer Preview/Orientation.

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.
This course involves a series of projects to introduce a variety of engineering and technology disciplines; hands-on experiences with selected engineering problems and issues; a team approach to managing engineering projects; discovering the unknown, formulating solutions, designing, manufacturing, and testing; and emphasis on learning modules, communication and presentation skills, creativity and innovation. Pre- or corequisite: eligible to enroll in MATH 162M or higher.

ENGN 150. Computer Programming for Engineering Problem Solving. 4 Credits.
Introduction to computer programming using engineering problem-solving. Software design topics include program design, algorithm development, and testing. Programming language concepts include data types (primitive, composite, abstract, pointers) and program structure (assignment and control flow statements, functions). Laboratory exercises involve utilizing C++ and Matlab to solve engineering problems (control, information processing, simulation, data analysis). Pre- or corequisite: MATH 163.

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: Senior standing.

ENGN 402. Introduction to Engineering Design for Teachers. 3 Credits.
This course is for K-12 teachers seeking endorsement. No credit will be given to students pursuing majors in the College of Engineering and Technology. The major focus of this course is to expose students to the design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. Topics include engineering design process, modeling, sketching, measurement, statistics and applied geometry, engineering drawing standards, CAD solid modeling, reverse engineering, consumer product design innovation, graphic design and virtual design teams. Prerequisites: MATH 211 and PHYS 111N.

ENGN 403. Statics for Teachers. 3 Credits.
This course is for K-12 teachers seeking endorsement. No credit will be given to students pursuing majors in the College of Engineering and Technology. 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. Prerequisites: MATH 211.

ENGN 404. Introduction to Fluids for Teachers. 3 Credits.
This course is for K-12 teachers seeking endorsement. No credit will be given to students pursuing majors in the College of Engineering and Technology. 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. Prerequisites: CET 200.

ENGN 405. Introduction to Thermodynamics for Teachers. 3 Credits.
This course is for K-12 teachers seeking endorsement. No credit will be given to students pursuing majors in the College of Engineering and Technology. 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 will be covered. Prerequisites: CHEM 121N, MATH 211, and PHYS 111N.

ENGN 444. Veterans in Engineering and Engineering Technology Seminar. 1 Credit.
This course aims to augment the transition from service to student to engineer through helping the veteran achieve a sense of belonging to the engineering profession through class discussions, seminars, and workshops designed to develop their identities as engineers and increase their feeling of belonging in engineering fields through self-efficacy and help with their persistence to degree completion. Class activities are designed to build a sense of community and increase students' relevance by helping students develop a career identity in engineering. Prerequisite: Junior standing or instructor permission.

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.

ENGT 305. Advanced Technical Analysis. 3 Credits.
Analytical and computational methods to support upper-division engineering technology courses. Topics include linear algebra, ordinary differential equations, engineering systems, elements of vector analysis, introductory statistical concepts, and software usage/development. MATLAB is used throughout the course to support all the topics. Presentation of various topics is adjusted for CET, EET or MET programs. Prerequisite: a grade of C or better in MATH 211.

ENGT 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. Prerequisite: Senior standing.

ENGT 435W. Senior Design Project. 3 Credits.
A capstone course utilizing upper-level coursework involving independent or group design projects under the direction of a sponsoring faculty member. Projects may involve analytical and/or experimental results. Formal written and oral reports will be required. This is a writing intensive course. Prerequisites: ENGT 434; Senior standing or faculty approval; grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.
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. 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. Prerequisites: Junior standing.

ENMA 424. Risk Analysis in Engineering Management. 3 Credits.
The systematic approach to analysis of risk as applied to engineering management with emphasis on cyber systems. The objectives of this course are (1) to gain an appreciation of the strategic importance of risk analysis and its relationship to other enterprise and engineering functions and (2) to develop a working knowledge of the concepts and methods in risk analysis as they may apply to cyber systems. Prerequisites: Junior standing.

ENMA 444. Leading Engineering Organizations. 3 Credits.
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. Prerequisites: Junior standing.

ENMA 480. Ethics and Philosophy in Engineering Applications. 3 Credits.
This course is designed to expose prospective engineering managers to 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 495/595. 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.

ENTR 368. Entrepreneurship Internship. 1-3 Credits.
Students complete an entrepreneurial project or assignment for a business, non-profit agency, or other organization. Students should work 50 hours for each credit and complete course assignments integrating coursework and entrepreneurial experiences. Prerequisites: ENTR 201S and approval of the program coordinator and Strome Entrepreneurial Center director.

ENTR 476/576. Social Entrepreneurship. 3 Credits.
The class draws students from all disciplines to collaborate with each other, faculty and community members as they co-design project-based solutions to pertinent social issues. Topics related to social entrepreneurship vary each year. Guided by distinguished faculty, students analyze their topic through in-depth classroom and field research, readings and off-campus trips. Prerequisite: ENTR 201S or PAS 300.

ENTR 477/577. Design Thinking. 3 Credits.
Design thinking is a human-centered approach to innovation that uses design methods and tools to integrate the needs of people and organizations, the opportunities of technology, and the requirements for personal, organizational, and business success. The design thinking course introduces students to a robust process for understanding problems, ideation, innovation, and entrepreneurship. This course is facilitated using workshops where students will work in project teams in a design thinking innovation challenge. Prerequisite: ENTR 201S.
ENVH 494. Entrepreneurship Project in Management. 3 Credits.
This course is designed to help students enhance their personal and professional development through innovation guided by faculty members and professionals. It offers students an opportunity to integrate disciplinary theory and knowledge through developing a nonprofit program, product, business, or other initiative. The real-world experiences that entrepreneurship provides will help students understand how academic knowledge leads to transformations, innovations, and solutions to different types of problems. The course can be delivered either as an independent project for individual students or as group projects similar to those sometimes offered in topics courses. Prerequisite: ENTR 201S or MGMT 426.

ENVH 498. Tutorial Work in Special Topics in Entrepreneurship. 3 Credits.
Independent reading and study on a topic to be selected under the direction of an instructor. The study should lead to presentation of a paper at a conference or publication as appropriate. Prerequisites: ENTR 201S and approval of the program coordinator.

ENVH - Environmental Health

ENVIRONMENTAL HEALTH Courses

ENVH 301. Principles of Environmental Health Science. 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. Prerequisite: A grade of C or better in ENGL 110C.

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 and Occupational Health Administration and Law. 3 Credits.
A review of the concepts and practice of administering environmental and occupational 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 and occupational policies as well as the legal implications of enforcement will be addressed. A review of all major 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 and Occupational Health Internship I. 3 Credits.
Includes placement in a health-related facility or industrial setting, prearranged with faculty instructor. Prerequisites: ENVH 301 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. Prerequisites: ENVH 301 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. Prerequisites: ENVH 301 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. 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: BIOL 110N or BIOL 121N, BIOL 117N or BIOL 123N, BIOL 103 or permission of the instructor.

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: BIOL 110N or BIOL 121N, BIOL 117N or BIOL 123N, BIOL 103, or permission of instructor.

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. Prerequisite: BIOL 103 or permission of instructor.

ENVH 423/523. Vector-Borne Diseases and Their Control. 3 Credits.
Vector-borne diseases affect the health and well-being of humans and other animals in a wide variety of ways. Arthropod vectors (e.g., mosquitoes, filth flies, ticks and related groups) transmit numerous debilitating infectious diseases that oftentimes impose significant burden on healthcare systems. This course provides insight on the ways in which arthropods impact global health and economic growth through the diseases they transmit. Prerequisite: BIOL 110N or BIOL 121N, BIOL 117N or BIOL 123N, BIOL 103, or permission of instructor.

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. Prerequisite: ENVH 406 or permission of instructor.

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 438/538. Environmental Emergencies and Disasters. 3 Credits.
This course uses a multi-disciplinary approach and draws on theory, case studies, research, and field experience to examine the global problem of environmental emergencies and disasters. Particular attention is devoted to the public health challenges posed by chemical and radiological contamination situations. Students discuss contemporary issues and controversies, and spend time working in teams to craft solutions to key emergency preparedness problems. Prerequisite: 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. Prerequisite: CHEM 121N, CHEM 123N, CHEM 211, BIOL 240 or BIOL 250, or permission of instructor.

ENVH 442/542. Industrial Hygiene Sampling Methods. 3 Credits.
An introduction to the detection and sampling alternatives used for estimating worker exposure to hazardous chemical, physical and biological agents in the occupational environment. Field and class activities are intended to simulate select occupational exposure situations and provide a basis for selection of the best evaluation techniques. Emphasis is on quantitative and qualitative methods typically used when estimating employee exposure to hazardous agents and the subjective decision making process. Pre- or corequisite: ENVH 441 or permission of 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: BIOL 110N or BIOL 121N, BIOL 117N or BIOL 123N, BIOL 240 or BIOL 250, CHEM 121N, CHEM 123N, or permission of the instructor.

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: PHYS 101N or PHYS 111N, CHEM 121N, CHEM 123N, MATH 162M, or permission of instructor.

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. Pre- or corequisite: ENVH 426 or permission of 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. Prerequisite: STAT 130M, MATH 162M or permission of instructor.

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. Environmental and Occupational 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 and occupational contaminants are discussed. Hazardous identification, exposure assessment, dose-response evaluation and risk characterization are emphasized. Risk management group projects assessing some real environmental risks are 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 and Occupational 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.
Breadth 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 240 or BIOL 250 AND MATH 102M or higher with a C or better.

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. Prerequisites: BIOL 240 or BIOL 250 AND MATH 102M or higher with a 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 240 or BIOL 250 AND MATH 102M or higher with a 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 240 or BIOL 250, BIOL 241 or BIOL 251, CHEM 121N and CHEM 122N with a C or better; MATH 102M or higher 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 240 or BIOL 250 AND MATH 102M or higher 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 240 or BIOL 250 AND MATH 102M or higher with a C or better; EXSC 326.

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EXSC 368. Internship. 12 Credits.
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) Prerequisites: senior standing, permission of the instructor, and
completion of all required courses in appropriate emphasis areas.

EXSC 369. Practicum in Exercise Science. 3-6 Credits.
Field-based experience in a fitness or allied-health setting. Minimum of 200
clock hours. Prerequisites: EXSC 225.

EXSC 397. Independent Study. 1-3 Credits.
Independent study of special topics 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 240 or BIOL 250, BIOL 241 or BIOL 251,
CHEM 121N and CHEM 122N with a C or better; MATH 102M or higher
with a 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: BIOL 240 or BIOL 250 AND
MATH 102M or higher with a C or better; EXSC 326.

EXSC 417/517. Biomechanics. 4 Credits.
Application of physical laws and mechanical principles to the human
musculoskeletal system. Prerequisites: BIOL 240 or BIOL 250, PHYS 111N
and MATH 102M or higher with a C or better; EXSC 322.

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: BIOL 240 or BIOL 250 and MATH 102M or higher with a C or
better; STAT 120M.

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: BIOL 240 or BIOL 250 AND
MATH 102M or higher with a C or better; EXSC 326.

EXSC 431W/531. Wellness Programming and Administration. 3
Credits.
This course provides an introduction to the principles of administration
and implementation of fitness and wellness programs to individuals,
groups, centers, and corporate settings. This is a writing intensive course.
Prerequisites: BIOL 240 or BIOL 250, MATH 102M or MATH 103M or
MATH 162M, and ENGL 211C or ENGL 221C or ENGL 231C with a C or
better.

FAST - Filipino-American Studies

FILIPINO-AMERICAN STUDIES Courses

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 course provides basic financial information an informed individual
should understand in order to successfully reach their personal goals. Topics
include budgeting, goal setting, the process of accumulating and protecting
wealth, use of credit, the car and housing decisions, and risk management.
Emphasis is on understanding how our behaviors affect successfully
reaching these goals and how to improve decision making. Prerequisites:
MATH 101M or higher.

FIN 220. Wall Street 101. 3 Credits.
This course is designed to provide students with basic knowledge of Wall
Street while learning how to utilize Bloomberg Terminals to gain practical
knowledge and experience. The students learn how to analyze the stock
market from both a "top-down," country and industry-wide perspective
as well as a "bottoms-up" individual company perspective. The students
learn how to utilize the power of Bloomberg terminals to implement those
strategies. The ultimate goal of this course is to give students the tools to
become savvy investors in the stock market.

FIN 317. Principles of Insurance and Risk Management. 3 Credits.
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. A group project related to a current risk management
and insurance topic is also required. Students receiving a B or better in this
course can have it count as the CPU 500 course of the Chartered Property-
Casualty Underwriter (CPCU) professional designation. Prerequisites: A
declared major in the University or permission of the Dean's Office of the
Strome College of Business.

FIN 319. Principles of Real Estate. 3 Credits.
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. Prerequisite: A
declared major in the University or permission of the Dean's Office.

FIN 323. Introductory Financial Management. 3 Credits.
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. Prerequisites: ACCT 201 or
ACCT 226, ACCT 202 or ACCT 227, and ECON 202S or ECON 227S; a
declared major in the University or an intended major in the Strome College
of Business or permission of the Dean's Office of the Strome College; AND
Junior Standing.
FIN 331. Legal Environment of Business. 3 Credits.
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 that control business practices. Prerequisite: A declared major in the University or permission of the Dean's Office.

FIN 333. The Legal Environment of Electronic Commerce. 3 Credits.
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. Prerequisite: FIN 331, and a declared major in the University or permission of the Dean's Office.

FIN 367. Cooperative Education. 1-3 Credits.
Available for pass/fail grading only. May be repeated for credit. Prerequisites: approval by the department and Career Development Services 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.

FIN 368. Finance, Real Estate and Insurance Internship. 1-3 Credits.
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 Development Services in the semester prior to enrollment. Prerequisites: a declared major in the University or permission of the Dean's Office.

FIN 369. Finance, Real Estate and Insurance Internship. 1-3 Credits.
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. Prerequisites: a declared major in the University or permission of the Dean's Office.

FIN 376. Honors: Introductory Financial Management. 3 Credits.
A special honors section of FIN 323. Open only to students in the Honors Program in Business Administration. 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.

FIN 378. Honors: Legal Environment of Business. 3 Credits.
A special honors section of FIN 331. Open only to students in the Honors Program in Business Administration. Prerequisite: a declared major in the University or permission of the Dean's Office.

FIN 410. Life and Health Insurance. 3 Credits.
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. Prerequisites: FIN 317 and a declared major in the University or permission of the Dean's Office.

FIN 411. Employee Benefit Planning. 3 Credits.
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. Prerequisites: FIN 317 and a declared major in the University or permission of the Dean's Office.

FIN 412. Property & Liability Insurance Company Operations. 3 Credits.
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. Students receiving a B or better in this course can have it count as the CPCU 520 course of the Chartered Property-Casualty Underwriter (CPCU) professional designation. Prerequisites: FIN 317 and a declared major in the University or permission of the Dean's Office of the Strome College of Business.

FIN 413. Risk Analysis and Control. 3 Credits.
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. Prerequisites: FIN 317 or equivalent and a declared major in the University or permission of the Dean's Office.

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.

FIN 415. Capstone in Financial Plan Development. 3 Credits.
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. Prerequisites: FIN 210S, FIN 317, FIN 411, FIN 431, and ACCT 421; and a declared major in the University of permission of the Dean's Office. Corequisite: FIN 414.

FIN 431. Investments. 3 Credits.
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. Prerequisites: FIN 323 with a grade of C or better and a declared major in the University or permission of the Dean's Office.

FIN 432. Intermediate Financial Management. 3 Credits.
Theoretical framework relevant to decision making in financial management: capital budgeting, capital structure, cost of capital, and working capital management. Prerequisites: FIN 323 with a grade of C or better and junior standing.

FIN 433. Introduction to Futures and Options. 3 Credits.
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. 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.

FIN 434. Management of Financial Institutions. 3 Credits.
An examination of the objectives, functions, policies, organizational practices, and government regulations of financial institutions. Prerequisite: FIN 323 with a grade of C or better and a declared major in the University or permission of the Dean's Office.

FIN 435. International Financial Management. 3 Credits.
Financial decision making involving flow and funds across national boundaries. Prerequisites: FIN 323 with a grade of C or better and a declared major in the University or permission of the Dean's Office.
FIN 439. Financial Decision Making. 3 Credits.
Application of financial theory and techniques to the analysis and solution of actual financial problems. Case analysis. Prerequisite: FIN 432 with a grade of C or better and a declared major in the University or permission of the Dean's Office.

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. Enterprise Risk Management. 3 Credits.
This course is designed as a capstone course for students concentrating in risk management and insurance. The class will be introduced to all aspects of enterprise risk management (ERM), which is the emerging paradigm in risk management. Additionally, students will work on a semester long risk management and insurance group project, typically related to a Hampton Roads organization. Students receiving a B or better can use this course as ERM 57, which can count toward the CPCU or ARM-E professional designation. Prerequisites: FIN 317 and a declared major in the University or permission of the Dean's Office.

FIN 450. Real Estate Finance. 3 Credits.
Explores the different financing and ownership arrangements used in real estate transactions. 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.

FIN 451. Real Estate Appraisal. 3 Credits.
Economic theories of value applied to real estate as a guide to business decisions. 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.

FIN 454. Real Estate Investment Analysis. 3 Credits.
Examination of developments in real estate valuation and investment with use of computer terminal models. 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.

FIN 497. Selected Topics in Finance. 3 Credits.
For advanced students in financial management. Prerequisite: permission of the department chair.

FIN 498. Selected Topics in Real Estate. 3 Credits.
For advanced students in real estate. Prerequisite: permission of the department chair.

FIN 499. Selected Topics in Insurance. 3 Credits.
For advanced students in insurance. Prerequisite: permission of the department chair.

FL - Foreign Languages

FOREIGN LANGUAGES Courses

FL 195. Topics in Foreign Languages. 1-3 Credits.
A study of selected topics for elective credit. These courses will appear in the course schedule.

FL 196. Topics in Foreign Languages. 1-3 Credits.
A study of selected topics for elective credit. These courses will appear in the course schedule.

FL 210. Language in Motion. 1 Credit.
This course provides opportunities for foreign language students with study-abroad and international experience to expand their knowledge of language and culture, to process their own intercultural and language-learning experiences, and to enrich local public school language classrooms. In addition to attending training workshops on topic selection, methodology, and technique, students will confer with the instructor and host teachers/community partners to develop individual projects for presentations in school classrooms. Particular activities will depend on the knowledge and interests of the students and the requests of the host teachers (International Education Week, National French Week, etc.). Prerequisites: Undergraduate-level foreign language study and study/sojourn abroad experience.

FL 369. Foreign Language Practicum. 3 Credits.
Internships in private, public and business organizations that deal with foreign nationals, foreign products or are involved in teaching French, German or Spanish. Prerequisites: nine credit hours of upper-level language at ODU, junior standing.

FL 452. Methods for Teaching Foreign Languages in Pre-K through Grade 12. 3 Credits.
Taken in the fall semester preceding student teaching. A systematic approach to established and experimental methods of foreign language instruction. Corequisite: FL 456. 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.

FL 456. Seminar in Foreign Language Teacher Education. 1 Credit.
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. Corequisite: FL 452. Prerequisite: passing scores on Praxis I and admission to the teacher education program.

FL 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: 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.

FL 495/595. Topics in Foreign Languages. 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. Prerequisite: permission of the instructor.

FL 497. Tutorial Work in Special Topics in Foreign Languages and Literatures. 1-6 Credits.
Independent readings and study on a topic to be selected under direction of professor. Prerequisite: appropriate survey course or permission by the instructor and chair.

FL 498. Tutorial Work in Special Topics in Foreign Languages and Literatures. 1-6 Credits.
Independent readings and study on a topic to be selected under direction of professor. Prerequisite: appropriate survey course or permission by the instructor and chair.

FR - French

FRENCH Courses

FR 101F. Beginning French I. 3 Credits.
Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments.

FR 102F. Beginning French II. 3 Credits.
Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments. Prerequisite: FR 101F or satisfactory score on the placement exam.

FR 195. Topics in French. 1-3 Credits.
A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule.

FR 196. Topics in French. 1-3 Credits.
A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule.

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.
A study of selected topics designed as electives for nonmajors. These courses will appear in the course schedule.

FR 296. Topics in French. 1-3 Credits.
A study of selected topics designed as electives for nonmajors. These courses will appear in the course schedule.

FR 311. Communicative Competence: Speaking and Listening. 3 Credits.
This course is primarily a conversation course to develop linguistic and cultural proficiency in verbal communication. Task-oriented communication strategies in cross-cultural training will be practiced by presenting students with models that demonstrate appropriate linguistic and cultural competencies. Students will practice these skills by role-playing, giving presentations, enriching self-awareness with practiced in-group discussions on various topics (such as race, gender, sexuality, and cultural expressions) to dispel stereotypes and foster more in-depth social-cultural understanding, and with participation in guided cultural encounters. Students will improve their listening and comprehension skills and deepen cultural proficiency by learning how to communicate and collaborate with other people and cultures in a global age. (This is an oral skills course.) Prerequisites: A grade of C or better in FR 202 or advanced placement or permission of the instructor.

FR 312W. Communicative Competence: Writing and Reading. 3 Credits.
This is a writing intensive course designed with writing assignments that examine various cultural contexts that enable students to understand cultural content, style, audience and organization. The main objective of the course is increased awareness of and sensitivity to appropriate word choice, and syntax in the language. Students will engage in writing for different cultural audiences and in varied contexts such as literary, artistic and media expressions around the world. Special emphasis is placed on the methodology of close reading as students hone the analytics skills and vocabulary necessary to interpret idioms, regionalism, cultural expressions and overall intercultural skills observed in various genres and cultures. Students will analyze compelling global issues and the diverse cultural perspectives that inform them. Prerequisites: A grade of C or better in ENGL 211C, ENGL 221C, or ENGL 231C and a grade of C or better in FR 202 or advanced placement.

FR 320. Contemporary France through the Media. 3 Credits.
This course introduces students to social, political, economic, intellectual and artistic manifestations of France and the French-speaking world today. Students learn to analyze socio-cultural trends as well as innovations in industry as they unfold and develop by reading French and Francophone newspapers and magazines, watching news broadcasts and exploring online content such as blogs, advertising and social media. Prerequisites: FR 202 or advanced placement.

FR 331. French Literary Forms: Prose. 3 Credits.
Students will be introduced to a selection of French/Francophone short stories, which will give them a general sampling of a variety of different styles and periods from the 18th to the 20th century, contextualized in historical, social, political, and cultural milieux. Students will learn different ways of approaching the French short story (historical, stylistic, philosophical), what to look for in a given story (ideas, language, plot) and how to write about French prose critically and creatively. Prerequisites: FR 202 or advanced placement.

FR 332. French Literary Forms: Theatre. 3 Credits.
Students will be introduced to a selection of French plays, which will give them a general sampling of a variety of different dramaturgical styles and periods from the Middle Ages to the 20th century, contextualized in the historical, social, political, and cultural milieu. Students will learn different ways of approaching French theater (historical, stylistic, philosophical), what to look for in a given play (ideas, poetry, plot) and how to write about French theater critically and creatively. Prerequisites: FR 202 or advanced placement.

FR 333. French Literary Forms: Poetry. 3 Credits.
Survey of French-language literary movements and an introduction to the genre of poetry from the Middle Ages to the present day. Poems and poets are contextualized in the historical, social, political, and cultural milieux. Course aims: allow students to gain an understanding of literary developments in the French language; introduce methods of literary analysis primarily through close reading of texts; give an experience of the creative process that goes into writing fixed-form poetry; practice recitation; allow students to reflect on recurrent themes in French-language poetry; and assess the pertinence of a literary form in the creative imagination of a nation. Prerequisites: FR 202 or advanced placement.

FR 366. Business French: Language and Culture. 3 Credits.
Students are introduced to the culture, politics, economics and commerce of modern France as they relate to the French business world, providing a background for all students regardless of specific career goals. They will learn to write and speak in a professional context and learn to apply what they have learned through the study of business documents and training in commercial correspondence. This class will also be useful preparation for those interested in internships abroad or in the U.S. (for more information about internship possibilities, contact Career Development Services in Webb Center). Prerequisites: FR 202 or advanced placement.

FR 369. Practicum. 1-3 Credits.
Internships in private, public and business organizations that deal with foreign nationals, foreign products or are involved in teaching French. Prerequisites: nine credit hours at the 300 or 400 level.

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.
This class is designed to solidify and refine students’ working knowledge of written skills in the language, with an emphasis on increasing their written sophistication. Focus is on analysis of vocabulary, grammar, and cultural nuances in the syntax to examine how language reflects the ways of life and beliefs of its speakers, contrasted with the extent of language’s influence on culture. Students will refine their skills in written inter-cultural communication, paying attention to idioms and the fine points of “cultural grammar,” communicative competence and specialized discourse to develop excellent communication skills. This course is intended to prepare students for using their knowledge of language and culture in professional settings. Prerequisites: FR 312W or permission of the instructor.

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 WCS 410/WCS 510. Prerequisites: German and French students must read and write in the target language. Pre- or corequisite: FR 312W.

FR 415/515. Applied Phonetics. 3 Credits.
This class is a skills-based, laboratory class on French phonetics designed to develop students’ mastery of spoken French. Students will acquire a more native-like French accent and see clear correspondences between orthography and pronunciation. By using oral texts with social and cultural themes students acquire knowledge of French pronunciation in a culturally relevant way. Students additionally investigate non-standard accents from Quebec, the south of France, and Belgium. Prerequisites: FR 311 or permission of the instructor.
FR 420/520. Francophone Civilization. 3 Credits.
This seminar traces the historical narratives of French colonialism up until contemporary times, examining the roots of unrest in the Maghreb and other ex-French colonies through representative political, literary, and cinematic texts relating to today's political flashpoints in the Maghreb and West Africa as well as other former French colonies. It also approaches different aspects of France's colonial and post-colonial legacy through a historical lens as students explore texts from such revolutionary leaders as Césaire, Senghor, Memmi and others. Examination of both the revolutionary movements that propelled France's ex-colonies towards independence and France's shifting perspectives from ex-colonizer to Francophone ally. Prerequisites: FR 312W 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 312W 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 'Encyclopédie' and leading to the Revolution of 1789; and the Rousseauistic return to nature and emotion. Representative readings. Prerequisites: FR 312W 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. Prerequisites: FR 312W or permission of the instructor.

FR 438/538. Studies in Twentieth-Century French Literature. 3 Credits.
A survey of representative works and movements in 20th century French and Francophone literature. Prerequisites: FR 312W or permission of the instructor.

FR 469/569. A History of French Cinema. 3 Credits.
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). Prerequisites: FR 312W or permission of instructor.

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.
Independent reading and study on topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: senior standing and approval of department chair.

FR 498. Tutorial Work in Special Topics in French. 1-3 Credits.
Independent reading and study on topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: senior standing and approval of department chair.

GAME - Gaming

GAME COURSES

GAME 201T. Introduction to Game Studies. 3 Credits.
An introduction to the core concepts and methodologies that inform game design, development, and criticism. This course will provide students with a critical overview of each of these content areas and will demonstrate how their specific concerns intersect in the design, production, and reception of contemporary games. It will also teach students hands-on methodologies through which to translate these concepts into creative and critical praxis.

GAME 240. Game Criticism. 3 Credits.
This course is designed to introduce students to the major theoretical approaches and debates that comprise game studies as an academic discipline. It will teach students how to research, evaluate, analyze, and construct persuasive arguments about games and game-related artifacts.

GAME 333. Game Balance, Rules, and Mechanics. 3 Credits.
This course focuses on the complex question of how game designers produce balance through rules, mechanics, aesthetics, and other formal and informal gameplay elements. This course will provide students with an analytical framework to better understand how these elements are not only manifested in specific games, but how they work to simultaneously distinguish genres of games. More significantly, it will provide students with a practical methodology that will help them understand how to apply the insights gained through this analysis to their own games. Prerequisites: GAME 201.

GAME 450. Game Development and Design Workshop. 3 Credits.
This workshop affords upper-division students the opportunity to tackle a wide variety of advanced projects on their own recognize. It provides students working in game design and development with practical, individualized guidance in crucial aspects of the design and development process, including ideation, research, prototyping, implementation, documentation, and playtesting. Likewise, it provides students working in game criticism with instruction in the scholarly process of identifying, researching, drafting, and revising critical arguments about games and game-related issues. Prerequisites: GAME 201.

GAME 466. World Building. 3 Credits.
An examination of world building as ludic, narrative, and spatial praxis. This course will examine how games and game-related texts create playable realities through a critical examination of historical and contemporary examples of world building across a variety of media. It will provide students practical experience with how to translate these theoretical into effective gameplay across a variety of genres of games. Prerequisites: GAME 201.

GAME 494. Entrepreneurship in Game Studies, Development, and Design. 3 Credits.
Although traditionally associated with commercial ventures, entrepreneurship encompasses a wide variety of approaches that are also relevant to the creative and critical performances that intersect in the design, production, and study of games. This course will broach the theoretical and practical questions of how entrepreneurship intersects with and is implicated in the production of game and game-based endeavors. Conceived as a studio course, it is designed to teach students a hands-on methodology through which they can translate entrepreneurial approaches into real-world outcomes. Prerequisites: GAME 201.
GDES - Graphic Design

GRAPHIC DESIGN Courses

GDES 280. Introduction to Graphic Design. 3 Credits.
This course is restricted to graphic design intended majors, and is the first course in the graphic design sequence. This course includes intensive study of the basic principles, theories and methods of graphic design, and the creation of visual communication. Topics of study include the characteristics and compositional principles applied to symbol, image, and letterform, as well as the history and practice of graphic design. Emphasis will be placed on creative process, developing visual concepts, formal values, use of materials, and craft. (Offered fall only) Prerequisites: ARTS 202 with a grade of C or higher and ARTS 231 with a grade of C or higher. Pre- or corequisite: ARTS 279 with a grade of C or higher.

GDES 365. Basic Typography. 3 Credits.
This course is restricted to graphic design intended majors, and is the second course in the graphic design sequence. It includes intensive study of the history, terminology, theory, and application of typography, and the creation of visual communication with particular emphasis on typographic content. Topics of study include typographic form and meaning, hierarchy, legibility and readability, structure and composition, and the management of written content within the design process. Specialized technical instruction includes software applications for document construction, layout, and letterform manipulation, building upon the experiences of ARTS 279. (Offered spring only) Prerequisites: GDES 280 with a grade of C or higher.

GDES 369. Design Internship. 3 Credits.
This advanced course is an individualized internship that focuses on the student’s emphasis within the graphic design industry. It is normally taken during the last semester. Students participate on-site with professionals and are evaluated by predetermined curriculum objectives that have been agreed upon by the employer, instructor and student. This course provides the student with valuable on-the-job experience, interaction with industry professionals, and preparation for job entry. Students must interview for and acquire their internship site. It is recommended that the student seek out instructor expertise for possible recommendation. Prerequisites: Approval by the department chair and Career Development Services is necessary prior to registration.

GDES 370. Graphic Design Continuance Review. 1 Credit.
This course is restricted to graphic design intended majors seeking continuance into the Graphic Design program, and is the third course in the graphic design sequence. It must be taken concurrently with GDES 365. Students will document their creative work from the required courses (ARTS 202, ARTS 231, ARTS 279, GDES 280 and GDES 365) and prepare a portfolio and application materials for the continuance review. At the conclusion of the semester, students will submit their review materials and complete the test of digital imaging skills. Students must pass this course to be admitted into the graphic design program. (Offered spring only) Corequisite: GDES 365. Prerequisites: GDES 280 with a grade of C or higher.

GDES 371. Design Concepts. 3 Credits.
This course is restricted to students admitted to the graphic design program, and is the fourth course in the graphic design sequence. The course includes intensive study of the development of creative and effective ideation for application to graphic design problems from selected aspects of the field. Topics of study include project research, content development, messaging, and individual and collaborative creative processes. Emphasis will be placed on critical skills, articulation, productivity, and response to clients, audiences and contexts. (Offered fall only) Prerequisites: GDES 365 with a grade of C or higher and GDES 370 with a passing grade. Pre- or corequisite: GDES 372.

GDES 372. Advanced Typography. 3 Credits.
This course is restricted to students admitted to the graphic design program, and is the fifth course in the graphic design sequence. It must be taken concurrently with GDES 371. This advanced course continues the development of typographic practice, and the creation of visual communication with an emphasis on the integration of typographic content and image. Topics of study include advanced issues in typographic hierarchies and composition, the organization, management and delivery of content, typeface selection, and typesetting. The course will also explore issues pertaining to meaning, concept, and expression. (Offered fall only) Prerequisites: GDES 365 with a grade of C or higher and GDES 370 with a passing grade. Pre- or corequisite: GDES 371.

GDES 373. Design Systems. 3 Credits.
This course is restricted to students admitted to the graphic design program, and is the sixth course in the graphic design sequence. The course includes intensive study of the development of creative and effective ideation for application across coordinated graphic design campaigns. Projects will address design in series and across multiple formats and media for commercial, promotional, educational, and informational contexts. (Offered spring only) Prerequisites: GDES 371 with a grade of C or higher and GDES 372 with a grade of C or higher.

GDES 374. Web Design. 3 Credits.
This advanced course is an introduction to the basic methods and techniques used to design for web-based delivery. Topics of study include; site management and organization, navigation, grid structures, hierarchy and inventory of content, appropriate use of type and graphics, and format. Emphasis will be placed on process and research, appropriateness, accessibility, dynamic user interface experiences. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 375. Poster Design. 3 Credits.
This advanced course is devoted to the creation of creative and thought provoking posters for organizations, events, productions and companies. Problem solving is structured to develop conceptual skills and research methodology for the design of posters. The class will utilize analog and digital formats for production. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 376. Typographic Design. 3 Credits.
This advanced course continues the study of typographic form, context, and communication in graphic design. Projects will address exploration in application, letterform creation, experimentation in media, and discovery of letterform traditions outside the Western foundry tradition. The course will also explore issues pertaining to meaning, concept, legibility, and expression. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 377. Illustrative Design. 3 Credits.
This advanced course is devoted to the study and creation of graphic illustration. Through lecture and demonstration, students will explore the particular design and conceptual characteristics and techniques that distinguish the work of notable graphic designers and illustrators. Studio exercises are structured to develop the use of advanced digital imaging tools with an emphasis upon integrating traditional drawing skills and media. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 378. Brand Identity. 3 Credits.
This advanced course is devoted to the study and design of coordinated systems of visual communication elements used to identify a company or cause. Projects will address project research, creative brief development, messaging, and effective ideation for application across coordinated graphic design campaigns for print and digital delivery. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 379. Environmental Graphics. 3 Credits.
This advanced course is devoted to the study and creation of designed spaces, spaces, and experiences that communicate identity and information while connecting people to place. Projects will address wayfinding systems, architectural graphics, signage, point of purchase design, exhibit design, and mapped and themed environments. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.
GDES 380. Art Direction. 3 Credits.
This advanced course is devoted to the development of conceptual strategies for communication design across a variety of advertising media. Topics of study will include project research, creative brief development, messaging, headline development, and the development of creative and effective ideation for application across coordinated advertising campaigns. This course introduces contemporary advertising strategies and practice for traditional and digital delivery and explores the interaction of advertising and graphic design. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 381. Interactive Design. 3 Credits.
This advanced course is devoted to creating dynamic design solutions for interactive devices, systems, and services. Students will learn to apply observational techniques to understand interactions in context, develop conceptual models and representations to assess the perspectives of prospective users, and develop interactions that are understandable and useful. Students will be introduced to the fundamental digital design process, and will experiment with a variety of interactive and dynamic design applications. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 382. Print Design. 3 Credits.
This advanced course is devoted to exploring the design and conceptual opportunities associated with the layout of multi-page publications. Emphasis is placed on selecting and using appropriate fonts, typefaces, and type styles for a variety of media. Students will experience the integration of image and type. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 383. Editorial Design. 3 Credits.
This advanced course is devoted to the study and creation of single volume and limited edition books. Problem solving is structured to develop conceptual skills and research methodology for the creation of original content intended for publication. Studio exercises emphasize the integration of traditional image creation and media with advanced digital imaging tools. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 384. Motion Graphics. 3 Credits.
This advanced course is an introduction to the basics of motion graphic design processes, and focuses on the creative and technical processes of creating motion graphics (predominantly 2D) for a variety of mediums including film, broadcast, DVD, and web. Students will gain practical experience in the development of an animated broadcast graphics package. Motion graphics in the context of interactive interfaces is also explored. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 385. Letterpress Design. 3 Credits.
This advanced course is devoted to the study and creation of expressive printed matter by means of foundry and wood type. Through lecture and demonstration students will explore the design and conceptual opportunities unique to moveable typographic composition and letterpress printing. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 386. Design Seminar. 3 Credits.
This course is restricted to students admitted to the graphic design program, and is the seventh course in the graphic design sequence. 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 only) Prerequisites: GDES 373 with a grade of C or higher.

GDES 476. Letterpress Design. 3 Credits.
This advanced course is devoted to the study and creation of expressive printed matter by means of foundry and wood type. Through lecture and demonstration students will explore the design and conceptual opportunities unique to moveable typographic composition and letterpress printing. Prerequisites: GDES 371 and GDES 372 or permission of the instructor.

GDES 477. Design Capstone. 3 Credits.
This course is restricted to students admitted to the graphic design program, and is the eighth course in the graphic design sequence. Students in this course will prepare for transition to design practice through the creation of a portfolio of design work or the completion of a thesis project appropriate to their personal and career goals. Course topics will include career options, self-promotion, resume preparation, portfolio design and production, market selection, and interview skills. All students are required to present their work at the Graphic Design Senior Exit Review. Additional review may be required by syllabus. (Offered spring only) Prerequisites: GDES 490 with a grade of C or higher. Pre- or corequisite: 15 hours from GDES 369, GDES 374, GDES 375, GDES 376, GDES 377, GDES 378, GDES 380, GDES 381, GDES 472, GDES 473, GDES 474, GDES 475, GDES 476, GDES 395, GDES 495, or GDES 497.

GDES 497. Tutorial Work in Graphic Design. 3 Credits.
An independent investigation of a subject selected and conducted under the advisement of a graphic design instructor. Prerequisites: Senior standing and permission of instructor and the chief departmental advisor.

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**GEOG - Geography**

**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 urban land use, 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 GEOG 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 Development Services prior to the semester in which the work experience is to take place. Prerequisites: Approval by the department and Career Development Services.

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. 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. This course may be repeated once provided it is a different topic and with permission of the instructor. 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 GEOG 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 GEOG 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 GEOG 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 446/546. Geography, Gender, and Sexuality. 3 Credits.
This course examines gender identity and sexuality in all of their diverse forms through a lens of human geography, such as metaphors of space and place, the cultural landscape, and 'mapping territory.' Topics explored include global gender identities; ‘queer space;’ ‘locating' gender and sexuality within the arts and tourism; the gendered citizen and the nation; and political economies of gender and sexuality. Prerequisites: Junior standing, GEOG 100S or GEOG 101S, a grade of C or better in ENGL 211C, ENGL 221C, or ENGL 231C, or permission of the instructor.

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 GEOG 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 GEOG 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 GEOG 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 GEOG 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 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 460/560. Medical Geography. 3 Credits.
The course covers a range of topics in medical and health geography, including spatial behaviors of infectious disease and health care access. The focus of the course is on the geographical patterns of health and disease from the population rather than individual scale. In addition to seminar style lectures and discussions, the course enables students to further investigate by learning how to conduct medical/health geography research. Prerequisites: Successful completion of the University’s lower-division General Education requirement in Human Behavior, or permission of the instructor.

GEOG 462/562. Advanced Spatial Analysis. 3 Credits.
This course introduces the essential theoretical concepts and analytical tools for analyzing spatial process, spatial autocorrelation, spatial patterns, techniques for spatial interpolation, network connectivity, big data, and landscape patterns. The course culminates with students carrying out their own spatial analysis projects. This course assumes that students understand the basic concepts in GIS with some experience in software operation of ArcGIS. Prerequisite: GEOG 402 or permission of the instructor.

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.
This is the first part of a two-semester introductory German language and culture course. Through the study of German culture, such as German geography, etiquette, customs, holidays as well as university, family, and work life, students learn basic grammatical concepts and vocabulary. The communicative cultural approach, interactive in-class and homework assignments, and the inclusion of multimedia (online resources, Youtube videos, songs, texts, films, etc.) enhance the acquisition of the basic skills of listening comprehension, speaking, reading, writing, and cultural competency.
GER 102F. Beginning German II. 3 Credits.
This is the second part of a two-semester introductory German language and culture course. Through the study of German culture, such as food and leisure culture, the German health system, and traveling in Germany, students continue to learn basic vocabulary and grammatical concepts. The communicative cultural approach, interactive in-class and homework assignments, and inclusion of multimedia (online resources, Youtube videos, songs, texts, films, etc.) enhance the acquisition of the basic skills of listening comprehension, speaking, reading, writing, and cultural competency. Prerequisites: GER 101F.

GER 195. Topics in German. 1-3 Credits.
A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule.

GER 196. Topics in German. 1-3 Credits.
A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule.

GER 201. Intermediate German I. 3 Credits.
This is the first part of a two-semester intermediate German language and culture course. Through the study of German culture, students continue to learn basic vocabulary and grammatical concepts and deepen their understanding of German culture. The communicative cultural approach, interactive in-class and homework assignments, and inclusion of multimedia (German websites, Youtube videos, songs, texts, films, etc.) enhance the acquisition of the basic skills of listening comprehension, speaking, reading, writing, and cultural competency. Prerequisites: GER 102F or satisfactory score on the placement test.

GER 202. Intermediate German II. 3 Credits.
This is the second part of a two-semester intermediate German language and culture course. Through the study of German culture, students continue to learn basic vocabulary and grammatical concepts and deepen their understanding of German culture. The communicative approach, interactive in-class and homework assignments, and inclusion of multimedia (online resources, Youtube videos, songs, texts, films, etc.) enhance the acquisition of the basic skills of listening comprehension, speaking, reading, writing, and cultural competency. Prerequisites: GER 102F or satisfactory score on the placement test.

GER 295. Topics in German. 1-3 Credits.
A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule.

GER 296. Topics in German. 1-3 Credits.
A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule.

GER 311. Communicative Competence: Speaking and Listening. 3 Credits.
This course is primarily a conversation course to develop linguistic and cultural proficiency in verbal communication. Task-oriented communication strategies in cross-cultural training will be practiced by presenting students with models that demonstrate appropriate linguistic and cultural competencies. Students will practice these skills by role-playing, giving presentations, enriching self-awareness with practiced in-group discussions on various topics (such as, prejudice, racism, values, and customs) that dispel stereotypes and foster more in-depth social-cultural understanding, and with participation in guided cultural encounters. Students will improve their listening and comprehension skills and deepen cultural proficiency by learning how to communicate and collaborate with other people and cultures in a global age. (This is an oral skills course.) Prerequisite: A grade of C or better in GER 202 or advanced placement or permission of the instructor.

GER 312W. Communicative Competence: Writing and Reading. 3 Credits.
This is a writing intensive course designed with writing assignments that examine various cultural contexts that enable students to understand cultural content, style, audience and organization. The main objective of the course is increased awareness of and sensitivity to appropriate word choice, and syntax in the language. Students will engage in writing for different cultural audiences and in varied contexts such as literary, artistic and media expressions around the world. Special emphasis is placed on the methodology of close reading as students hone the analytics skills and vocabulary necessary to interpret idioms, regionalism, cultural expressions and overall intercultural skills observed in various genres and cultures. Students will analyze compelling global issues and the diverse cultural perspectives that inform them. Prerequisites: A grade of C or better in ENGL 211C, ENGL 221C or ENGL 231C and a grade of C or better in GER 202, advanced placement or permission of the instructor.

GER 321. German Civilization from the Middle Ages to World War I. 3 Credits.
Over the centuries, German culture and history have exerted a tremendous influence on Western Civilization. This course will trace Germany's historical and cultural development from Emperor Barbarossa's Holy Roman Empire of the German Nation to World War I. Readings will include segments from various chapters of Die Deutschen reflecting central aspects of the major cultural epochs of Western Civilization including the Middle Ages, the Age of Reformation and the Nordic Renaissance, Baroque, The Age of Enlightenment, German Classicism and Romanticism, Young Germany during the revolutionary period of 1848 and up to German Expressionism and World War I. The central themes will be complemented by a variety of other samples drawn from poetry, philosophy, music and the visual arts. Prerequisites: GER 311 or GER 312W.

GER 350. Modern Swiss German Literature: A Multicultural Model. 3 Credits.
Readings and discussions of selected master works by Frisch and Durrenmatt, the two literary giants of modern Swiss literature. Topics include the multicultural aspects of modern Switzerland, the concepts "Heimat," provincialism versus globalization, Old World versus New World, the dialectics of myth and modernity, the mixed blessings of technology, as well as the discourse of gender ideology and matriarchal mythography. The course is complemented by a film screening and slide presentations. Readings and discussions are in German. Prerequisites: GER 311 or GER 312W or permission of the instructor.

GER 355. The City as Cultural Focus. 3 Credits.
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. Prerequisite: GER 311 or GER 312W or permission of the instructor.

GER 366. Business German: Language and Culture. 3 Credits.
This is an advanced intermediate German language and culture course that prepares students for using German in professional settings. Since the course focuses on German language usage in personal, business, and employment situations, the vocabulary is geared toward living and working abroad. Students gain a deep knowledge about German business culture and social etiquette, engage in situational role-playing, create an application portfolio in German geared towards the German job market, and prepare for job interviews. The workshop format of the course, the inclusion of online resources and authentic materials provide students with hands-on immersion in German business culture. This course offers some grammar review and practice. Prerequisites: GER 311 or GER 312W or permission of the instructor.

GER 378. Extracurricular Studies. 1-3 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. Prerequisites: approval of the department chair.
GER 380. German Literature from Sturm und Drang to Jugendstil. 3 Credits.
Readings and critical interpretations of exemplary literary works and historical documents that reflect the various representative periods of German and European culture and history from the second half of the 18th century to the beginning of the 20th century. In addition to understanding and appreciating these texts for their own artistic and historical value, students will also interpret them as first intellectual articulations of issues that will become central for the social and cultural history of (post-) modernity. They include the topics of religious relativism, issues of gender and sexual politics, aesthetics, social justice and multicultural diversity. The course will be complemented with video clips, films, and samples from musical history and the visual arts. Readings and discussions in German. Prerequisites: GER 311 or GER 312W.

GER 395. Topics in German. 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. Prerequisite: GER 202 or the equivalent.

GER 396. Topics in German. 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. Prerequisite: GER 202 or the equivalent.

GER 407/507. Advanced Grammar and Syntax. 3 Credits.
This class is designed to solidify and refine students' working knowledge of written skills in the language, with an emphasis on increasing their written sophistication. Focus is on analysis of vocabulary, grammar, and cultural nuances in the syntax to examine how language reflects the ways of life and beliefs of its speakers, contrasted with the extent of language's influence on culture. Students will refine their skills in written inter-cultural communication, paying attention to idioms and the fine points of "cultural grammar" communicative competence and specialized discourse to develop excellent communication skills. This course is intended to prepare students for using their knowledge of language and culture in professional settings. Prerequisites: GER 311 and GER 312W, or permission of the instructor.

GER 408/508. Conversation and Composition. 3 Credits.
This course is designed to further develop the mastery of spoken and written German, review grammar, build vocabulary and fine-tune the student's stylistic proficiency in German. The textbook Anders gedacht is an intermediate/advanced reader that covers a wide variety of historical, political and cultural events and developments in contemporary German speaking countries. The Übungsbuch accompanies the grammatical and thematic features of the textbook and provides further exercises. The course will be complemented by several video screenings and multimedia presentations covering a variety of aspects in contemporary German speaking culture. Prerequisites: GER 311 and GER 312W, or permission of the department chair.

GER 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 1980s in cross-disciplinary discourses such as film, literature, art, politics, and economics. Cross-listed with WCS 410/WCS 510. Prerequisites: German and French students must read and write in the target language.

GER 420/520. Masterpieces of German Poetry. 3 Credits.
This course will delineate 800 years of German poetry, analyzing exemplary works within their cultural and historical context such as the courtly love tradition of the Middle Ages, the spirituality of the German Reformation, the (meta-)physical passions of the Baroque, the humanist ideals of Weimar Classicism, the profound longings and ultimate ironies of German Romanticism, fin de siecle symbolism and European decadence, the avant-garde of Weimar culture, the legacy of the Third Reich, and the politics and politics of East/West Germany up to the fall of the Berlin Wall and the unification of Germany. The close readings will be complemented by videos, film clips, slides and musical samples. Readings and discussions in German. Prerequisites: GER 311 and GER 312W, or permission of instructor.

GER 445/545. German Cinema I. 3 Credits.
The first half of the 20th century was the most creative and destructive period in German and European history. Its rich cultural achievements included Viennese psychosocial theory of the turn of the century, Art Nouveau, German Expressionism, and the avant garde aesthetics of the Weimar Republic. Conversely, World War I and II exposed the cultural agony and human depravity of modern civilization. This course will trace these various aspects and developments in a variety of exemplary genres. Readings and discussions in German. (Cross-listed with WCS 445/WCS 545 and COMM 444/COMM 544) Prerequisite: GER 311 or GER 312W or permission of instructor.

GER 446/546. German Cinema II. 3 Credits.
This course will focus on the German cinema from perspectives such as fascism and its legacy, film as historical critique, or Weimar cinema. This survey course covers major German movies in film history from the 1970's to the present. (Cross-listed with WCS 445/WCS 545 and COMM 444/COMM 544) Prerequisite: GER 311 or GER 312W or permission of instructor.

GER 450/550. German Satires and Parodies. 3 Credits.
A study of comical and satirical features in exemplary literary and visual texts ranging from late medieval broad sheets and moralistic narratives to postmodern parodies in literature, music, film and graphic design. Students will study a wide variety of texts and analyze them as critical reflections of their social and cultural contexts, which include the spiritual conflicts and religious challenges of the Age of Renaissance and Reformation, anti-Nazi collages, and the permanent quest for pleasure and entertainment in our present-day multi-media Spassgesellschaft (fun society). Readings and discussions in German. Prerequisites: GER 311 and GER 312W, or permission of instructor.

GER 455/555. Germany 1900-1945: From High Culture to Holocaust. 3 Credits.
The first half of the 20th century was the most creative and destructive period in Germany and European history. Its rich culture achievements included Viennese psychoanalytical theory of the turn of the century, Art Nouveau, German Expressionism in painting and poetry, and the avant garde aesthetics of the Weimar Republic (film, dance, cabaret, architecture etc.). They played a central part in the evolution of a modern and postmodern sensibility. Conversely, World War I and World War II exposed the cultural agony and human depravity of modern Civilization. This course will trace these various aspects and developments in a variety of exemplary verbal and visual texts, including the genres of poetry, novella, drama, painting and film. Readings and discussions in German. Prerequisites: GER 311 and GER 312W.

GER 470/570. Post World War II Germany. 3 Credits.
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 Dörrie et al, as well as film, painting, popular music, the culture of memory and German Jewish relations after the Shoah. Prerequisite: GER 311 or GER 312W.

GER 476/576. German-Jewish Literature and Culture. 3 Credits.
A survey of seminal texts by German-Jewish philosophers and writers from the Enlightenment to the present day, including Marx, Kafka, Freud, Schnitzler and Arendt. (cross-listed with WCS 476/WCS 576). Prerequisites: junior standing.

GER 478/578. German Drama. 3 Credits.
This course provides a survey of representative examples from 200 years of German drama. Texts include plays from Weimar Classicism, Young Germany, Naturalism and Symbolism, fin de siècle Vienna, German Expressionism, Weimar Modernism, Exile Literature, "Vergangenheitsbewältigung" (texts of coming to terms with the past), and post-modern experimentalism. The course will focus on issues such as mythology, psychopathology, sexual morality, epic theater, Marxist ideology, fascism and guilt, and feminist politics and aesthetics. The readings will be complemented by screenings of various film adaptations. All readings and discussions are in German. Prerequisites: GER 311 and GER 312W.
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. 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. Prerequisite: appropriate survey course or permission of the instructor.

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.

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.

HEBR - Hebrew

HEBR 111F. Beginning Hebrew I. 6 Credits.
Aural comprehension, oral drill and discussion of grammar principles, written exercises and reading assignments.

HEBR 212. Intermediate Hebrew. 6 Credits.
Oral drill and discussion of grammar principles, written exercises and reading assignments. Prerequisite: HEBR 111F or permission of the instructor.

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 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. Heroes and Hoplites: Ancient Greece. 3 Credits.
This course will explore the history and material culture of the ancient Greek world, from the Bronze Age Minoans to the death of Alexander the Great. Key ideas will include hoplite warfare, Greek religion, the conflict with Persia, the development of Athenian democracy and Sparta’s mixed constitution, and the eventual conflict between these two city-states. 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 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 309. The Crusades. 3 Credits.
This course examines the series of conflicts between Western Europe and the Middle East from the 11th to the 14th century. It investigates the motives, process and outcomes of the invasion of the Middle East by European armies. It also addresses how this phenomenon has been understood in the past. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, 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 312. The Rise of Rome: The Roman Republic. 3 Credits.
The course explores the history and material culture of the Roman Republic from its foundation in the sixth century BCE through the civil wars of the first century BCE. This class will emphasize the political institutions of the Republic and its conquests throughout the Mediterranean world. It will also study the social and religious institutions that influenced Rome. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H or HIST 127H.

HIST 313. Bread and Circuses: The Roman Empire. 3 Credits.
This course explores the history and material culture of the Roman Empire as it emerged from the ashes of the Roman Republic, through its transformation in later antiquity under the Christian emperors. It studies the emperor’s ability to maintain peace and explores the ways in which religion, family, and entertainment shaped the daily life of the empire's inhabitants. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, 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 315. Into the Arena: Christians in the Ancient World. 3 Credits.
How did Christians go from being a tiny sect to the religion of the Roman Empire? Why did some Romans persecute Christians? Could someone be both a Jew and a Christian at the same time? This class explores the history and material culture of early Christianity from its origins in Jewish Palestine to its ascendency as an imperial religion. Prerequisite: 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. Ancient and Medieval England. 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. Modern Britain. 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 325. Rise and Fall of Empires. 3 Credits.
This course examines the expansion of European empires from the 15th through the 20th century. It explores the dynamics of imperialism and colonialism, including ideologies of conquest, trade and commerce, labor and slavery, cultural encounters, and racism and exploitation. It concludes with a review of decolonization and its consequences for our world. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H, or HIST 127H.

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. Russia from Stalin to Putin. 3 Credits.
The course is a survey of the formation and development of the USSR from the fall of the Russian monarchy and the revolutions of 1917 to the emergence of the Russian Federation after 1991. 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 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 U.S. 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 365. Reform in U.S. History. 3 Credits.
This course explores the role of reform in shaping American history from
the colonial era to the late 20th century. Topics addressed include rebellion
as reform, the eras of reform, reform in modern America, and the role of
conformity versus individualism. 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. Prerequisites: Permission of
the department and one or more Interpreting the Past courses.

HIST 370. Africa and the Atlantic Slave Trade. 3 Credits.
This course examines political, commercial and cultural developments in
Africa from 1400 to 1900 in the context of the Atlantic slave trade. It
provides students a basic understanding of the historical slave trade and
the role that Europeans, Americans and Africans played in it, and asks
what influence the slave trade had on African economies and societies.
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 374. Spain in America: The Rise of the Hispanic World. 3 Credits.
Beginning with Spain's leading role in European expansion in the 15th and 16th centuries, this course explores the formation of the 300-year Spanish empire in America, the impact in both America and Europe of its encounter with native Americans, and the myriad colonial-era institutions that would shape the future of the Hispanic world. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, 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 404. Magic and Witchcraft in Europe. 3 Credits.
This course examines magic and witchcraft in Europe from 1300-1700, focusing on the religious, social, economic and cultural factors associated with these beliefs. It attempts to explain why persecution intensified at a certain point as well as why it eventually subsided. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H, or HIST 127H.

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 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 417. World War I: The Great World War on All Fronts. 3 Credits.
This course will examine "The Great War" from its origins in the late nineteenth century to the Paris Peace Conference and from a variety of perspectives from battlefields and trenches to the home-front. It will also consider the impact of the war on society and its relevance to the contemporary world. Prerequisites: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H or HIST 105H.

HIST 420. 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. Struggle for Democracy and Development in 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 impurity, 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 471. Revolution in Latin America. 3 Credits.
No world region matches Latin America in the frequency or extentive impacts of social revolution and social revolutionary movements from the 19th century to the present. A comparative approach to causation, process and outcome will govern the course, with special attention to the role of violence, ideology, international relations and socioeconomic structure. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, 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. 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 482. Global History of Sport. 3 Credits.
This course examines imperialism, globalization, cultural diffusion, modernization, and social movements through the aperture of global sport. It pays attention to how sports act as embodiments of cultural performance and enable culture and political influence, as well as resistance, from the ancient Greeks through the twentieth century. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H, or HIST 127H.
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. 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.

HEALTH SCIENCES Courses

HLTH 101. Introduction to the Health Professions. 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.
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. Prerequisite: HLTH 101 or permission of instructor.

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.
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. Prerequisite: junior standing.

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.
Intensive course. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C. Pre- or corequisite: HMSV 341 with a grade of C or better.

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 of C or higher, and HMSV 343W with a grade of C or higher.

HMSV 397. Independent Study. 3-6 Credits.
Individual study under the supervision of an undergraduate faculty member. Prerequisites: Approval of Human Services Program Director and Counseling and Human Services Department Chair.

HMSV 440W. Program Development, Implementation, and Funding. 3 Credits.
This course presents models and practices in evaluating, monitoring, and implementing human services programs. The course includes an overview of funding, creating budgets and monitoring expenditures for programs. This is an upper-level writing intensive class. A grade of C or better is required. Prerequisites: HMSV 341 with a C or better, HMSV 343W with a C or better, and ENGL 211C or ENGL 221C or ENGL 231C with a C or better.

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. Introduction to Substance Abuse. 3 Credits.
This course develops the professional identity of the student as a practitioner of substance abuse services while introducing the student to the signs and symptoms of substance abuse, the recovery process and relapse prevention methods. 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. Crisis Intervention, Prevention and Ethics. 3 Credits.
This course explores effective crisis intervention, examines prevention strategies, and develops students' ethical decision making within human service practice. Prerequisite: HMSV 341 with a grade of C or higher and HMSV 343W with a grade of C or higher.

HMSV 452. Substance Abuse Treatment and Research. 3 Credits.
This course explores effective substance abuse treatment planning and intervention strategies through lectures and experiential learning and examines research trends in the substance abuse field. Prerequisites: HMSV 341 with a grade of C or better, HMSV 343W with a grade of C or better and HMSV 447 with a grade of C or better.

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. Prerequisites: Completion of all coursework including General Education requirements, core courses, major courses, and elective courses; a grade of C or better in all prior HMSV courses and program approval is required. Pre- or corequisite: HMSV 339, HMSV 341, HMSV 343W, HMSV 344, HMSV 346, HMSV 368, HMSV 440W, HMSV 444, HMSV 447 or HMSV 448, HMSV 449, HMSV 452 or HMSV 494, and HMSV 491.

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, substance abuse and addiction, 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 494. Entrepreneurship in Human Services and Non-Profit Fundraising. 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. This course replaced HMSV 441. Students with credit for HMSV 441 cannot receive credit toward their degree for HMSV 494. Prerequisites: HMSV 341 with a grade of C or higher 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 100. Honors General Education Abroad (Humanities). 3 Credits.
Taught in an international setting, special honors sections of general education courses meeting one of the following lower-division general education requirements: oral communication, information literacy, language and culture, literature, human creativity, human behavior, interpreting the past, the impact of technology, or philosophy and ethics. Prerequisites: A passing score on the Writing Sample Placement Test and permission of the instructor.

HNRS 101. Honors General Education Abroad (Sciences). 3-4 Credits.
Taught in an international setting, special honors sections of general education courses meeting one of the following lower-division general education requirements: mathematical skills, information literacy, the nature of science, and the impact of technology. Prerequisite: A passing score on the Writing Sample Placement Test.

HNRS 200. Peer Education and Leadership. 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.
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. Prerequisite: approval of Honors College Dean.

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.
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. Prerequisite: junior standing in the Honors College.
HNRS 395. Honors Topics. 1-3 Credits.
A study of selected topics. Honors Topics courses are designed to help students to make connections between academic knowledge and relevant experience, observe connections across disciplines, as well as adapt/apply skills, abilities, theories or methodologies gained in one situation to meet the needs of new situations. These courses are open to non-honors students with at least a 3.25 cumulative GPA. 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.

HNRS 396. Honors Topics (Study Abroad). 1-3 Credits.
A study of selected topics examined in an international setting. Honors Topics Abroad courses are designed to help students gain new perspectives on their fields of study, develop intercultural competencies and communication skills, and engage with situations and questions that challenge their own assumptions/values. These courses are open to non-honors students with a cumulative GPA of at least 3.25. 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.

HNRS 401/501. Social Entrepreneurship. 3 Credits.
This class draws students from all disciplines to collaborate with each other, faculty, and community members as they co-design project-based solutions to pertinent social issues. Topics related to social entrepreneurship vary each year. Guided by distinguished faculty, students analyze their topics through in-depth classroom and field research, readings, and off-campus trips. Prerequisite: ENGL 211C or equivalent.

HNRS 487. Senior Honors Colloquium. 3 Credits.
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." Prerequisite: senior standing in the Honors College or permission of the dean.

HNRS 497. Honors Independent Study. 1-3 Credits.
Offered upon request each semester. This course is an opportunity for students to engage in directed readings and/or research in a topic with which they are familiar. Prerequisite: open to juniors and seniors in the Honors College.

HNRS 498. Honors Independent Study. 1-3 Credits.
Offered upon request each semester. This course is an opportunity for students to engage in directed readings and/or research in a topic with which they are familiar. Prerequisite: open to juniors and seniors in the Honors College.

HNRS 499. Senior Honors Thesis. 3 Credits.
Each student will undertake a research experience under the supervision of a faculty member. A research proposal and research report are required. Prerequisites: permission of the Honors College Dean, 3.25 cumulative GPA.

HPE - Health and Physical Education

HEALTH AND PHYSICAL EDUCATION Courses

HPE 200. Foundations of Education, Physical Education and Health. 3 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 218. Aquatics and Outdoor Education. 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. Prerequisites: open to PE - Teacher Prep majors only.

HPE 220. Teaching of Team Sports. 3 Credits.
This course covers skills and strategies of team sports, where opposing teams interact directly and simultaneously to achieve an objective. The team sports will be broken down into the components of territory, net/wall, and fielding/run scoring games. The student teacher will become familiar with teaching and organizational techniques appropriate for each activity. Emphasis is placed on a tactical approach and knowledge of sport specific skills, game strategy, rules, teaching facilitation, organization, and demonstration of different parts of a lesson. Prerequisites: open to PE-Teacher Preparation majors only.

HPE 222. Teaching Individual Sports and Dance. 3 Credits.
This course is designed as both a laboratory and methods class in which the student learns skills and strategies of picklesball, bowling, badminton, golf, tennis, gymnastics, and dance. It is designed to develop knowledge, understanding, and attitudes of fundamental movements. The student teacher will become familiar with teaching and organizational techniques appropriate for each activity. Emphasis is placed on a tactical approach and knowledge of specific skills, game strategy, rules, teaching facilitation, organization, and demonstration of different parts of a lesson. Prerequisites: open to PE - Teacher Prep majors only.

HPE 224. Personal and Community Health. 3 Credits.
This course is designed to develop knowledge, understanding, attitudes, and desirable practices related to personal and community health.

HPE 230. Seminar and 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. This course requires a completed ODU clearance/background check prior to entering a school or community agency. Visit: www.odu.edu/tes for clearance procedures. If students do not have the clearance by the first week of classes, they will be dropped.

HPE 295. Topics in Physical Education. 1-3 Credits.
This course provides an opportunity for in-depth study of selected topics in physical education. Prerequisite: sophomore standing and approval of program advisor.

HPE 301W. Methods and Materials in Teaching Physical Education. 3 Credits.
A course designed to acquaint the teacher candidate with the current theories, techniques, and practices utilized in teaching physical education. Discussions will focus on the various age group characteristics, interests, needs and learning styles as related to a school setting. Observation, analysis, and prescription of motor skills, movement concepts, instructional techniques, and curriculum models are aimed at providing the professional educator with an increased understanding of how these factors directly relate to a process of effective teaching. This is a writing intensive course. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C and HPE 200.

HPE 317. Human Growth & Motor Development. 3 Credits.
This course is 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-12 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: HPE 200.

HPE 318. Motor Learning. 3 Credits.
This course is 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: HPE 200.
HPE 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 two-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: HPE 200 and Junior standing.

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 Experience and Instructional Planning in Health and Physical Education. 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. This course requires a completed ODU clearance/background check prior to entering a school or community agency. Visit: www.odu.edu/TES for clearance procedures. If students do not have the clearance by the first week of classes, they will be dropped. Prerequisites: HPE 200, passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores and admission into teacher education.

HPE 400. 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: HPE 200 and passing Praxis Core Math score.

HPE 402/502. Methods and Materials in Health Education. 3 Credits.
This course will enable teacher candidates to gain insight into the techniques, methodology, and philosophy of field-based health and physical education. Teacher candidates will be expected to observe and participate in the teaching of simple lessons. Prerequisites: HPE 200 and HPE 224.

HPE 404/504. Adapted Physical Education. 4 Credits.
Students will become acquainted with the practices and researching of different disabilities, the learning modes of the exceptional child, and IDEA (the law that advocates free and appropriate education). The course will also examine how to work within the ecosystem surrounding a child with disabilities. A vital component of the course will be the practical application of theory. Prerequisites: HPE 200.

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 409/509. Physiology of Exercise. 3 Credits.
An investigation into the physiological adjustments of the human organism to exercise, including systematic and 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 240 or BIOL 250.

HPE 430/530. Nutrition and Fitness Education. 3 Credits.
The study of techniques for the teaching of nutrition and health-related fitness. Content to be covered includes nutrition and various aspects of fitness training appropriate for the teaching of PreK-12 physical education and health. Prerequisites: HPE 200 and HPE 402.

HPE 480. 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 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. This course requires a completed ODU clearance/background check prior to entering a school or community agency. Visit: www.odu.edu/TES for clearance procedures. If students do not have the clearance by the first week of classes, they will be dropped. 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 497. Topics in Health and Physical Education. 1-3 Credits.
Prerequisite: permission of the instructor.

HPE 498. Topics in Health and Physical Education. 1-3 Credits.
Prerequisite: permission of the instructor.

HUM - Humanities

HUMANITIES Courses

HUM 410/510. Social Justice Theory and Practice. 3 Credits.
This course is designed to equip students with tools and perspectives to be effective and knowledgeable leaders and participants in organizing communities around issues and challenges related to social justice. Course readings will be used to ground, inform, and challenge students as they explore the complex and exciting dynamics of social justice work. Students are also expected to engage in the practical work or critique and evaluation of an organizing campaign with which they are already involved or interested. Prerequisite: Instructor permission required.

HUM 411/511. Health and Humanities Pro-seminar. 3 Credits.
This course is concerned with addressing the human side of medicine and as such draws theoretical, critical and practical insights from across the social sciences and the arts to explore the meanings attached to illness, disease, embodiment, disability, health and therapeutic encounters (from both a professional and patient perspective). It embraces matters of ethics, aesthetics, history, representation and reflective practice. Prerequisite: Instructor permission required.

HUM 490/590. Capstone Project. 1 Credit.
Students will apply the cumulative knowledge and skills they have acquired throughout one of the certificate programs offered through the Institute of Humanities toward developing a substantial proposal for either a health care project/initiative/campaign/intervention (Health & Humanities certificate), an art-based business or program proposal (Arts & Entrepreneurship certificate), or a social justice project/initiative/campaign/intervention (Social Justice & Entrepreneurship certificate). Based on feedback received, students will revise the proposal. Prerequisite: Instructor permission.

IDS - Interdisciplinary Studies

INTERDISCIPLINARY STUDIES Courses

IDS 300W. Interdisciplinary Theory and Concepts. 3 Credits.
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. Prerequisites: a grade of C or better in ENGL 211C, ENGL 221C or ENGL 231C.

IDS 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.
IDS 368. Internship in Interdisciplinary Studies. 1-6 Credits.
An opportunity to integrate service and applied learning experience with interdisciplinary perspectives. Prerequisite: junior standing and permission of individualized interdisciplinary studies program coordinator.

IDS 369. Internship in Conservation Leadership. 3-6 Credits.
As part of the Conservation Leadership minor, this graded internship will provide an opportunity to integrate service and applied learning experience with interdisciplinary perspectives. 200 hours are required for the 3-credit option, and 400 hours are required for the 6-credit option. Prerequisites: BIOL 466W/OEAS 466W/IDS 466W and BIOL 467/OEAS 467/IDS 467.

IDS 397. Independent Study. 1-6 Credits.
IDS 398. Independent Study. 1-6 Credits.
IDS 400/500. Study Abroad. 0 Credits.

IDS 466W. Introduction to Mitigation and Adaptation Studies. 3 Credits.
Students will be introduced to the science underpinning mitigation of human-induced changes in the Earth system, including but not limited to climate change and sea level rise, and adaptation to the impacts of these changes. The course will cover the environmental hazards and the opportunities and limitations for conservation, mitigation and adaptation. This is a writing intensive course. Cross listed with BIOL 466W and OEAS 466W. Prerequisites: BIOL 291 or permission of instructor.

IDS 467. Sustainability Leadership. 3 Credits.
In this class, students will discover what makes a leader for sustainability. They will consider a range of global and local crises from a leadership point of view in the context of sustainability science, which addresses the development of communities in a rapidly changing social, economic, and environmental system-of-systems environment. The course will be based on taking a problem-motivated and solution-focused approach to the challenges considered. The course includes a service learning project focusing on a leadership experience in solving a real-world environmental problem. Prerequisite: BIOL 466W or OEAS 466W or IDS 466W.

IDS 493. IDS Electronic Portfolio Project. 3 Credits.
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. Prerequisites: IDS 300W or permission of the instructor and senior standing.

IDS 494. Entrepreneurship in Interdisciplinary Studies. 3 Credits.
This course is designed to help students enhance their personal and professional development through innovation guided by faculty members and professionals. It offers students an opportunity to integrate disciplinary theory and knowledge through developing a nonprofit program, product, business, or other initiative. The real-world experiences that entrepreneurs provide will help students understand how academic knowledge leads to transformations, innovations, and solutions to different types of problems. Prerequisite: IDS 300W and approval of the program coordinator.

IDS 495. Topics in Integrative Studies. 3 Credits.
Focused study of selected topics linking perspectives, research and applications from a variety of disciplines. Emphasis is on disciplinary synthesis. Prerequisite: IDS 300W.

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. Open only to individualized integrative studies majors. Prerequisites: IDS 300W, permission of the instructor and an approved individualized integrative studies curriculum plan.

IDT - Instructional Design and Technology

INSTRUCTIONAL DESIGN AND TECHNOLOGY Courses

IDT 475/575. Web Development for Educators. 3 Credits.
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. Prerequisites: senior standing.

INBU - International Business

INTERNATIONAL BUSINESS Courses

INBU 367. Cooperative Education. 1-3 Credits.
May be repeated for credit. Supervised experience in the international business work place requiring written statement of objectives and evaluation of experience. Pass/fail grading only. Prerequisites: Permission of IB coordinator and Career Development Services, and a declared major in the University or permission of the Dean's Office.

INBU 368. Internship in International Business. 1-3 Credits.
Supervised experience in the international business work place requiring written statement of objectives and evaluation of experience. Pass/fail grading only. Prerequisites: Permission of IB coordinator and Career Development Services, and a declared major in the University or permission of the Dean's Office.

INBU 431. Doing Business in Europe. 3 Credits.
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. 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.

INBU 432. Doing Business in Latin America. 3 Credits.
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. 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.

INBU 433. Doing Business in Asia. 3 Credits.
An analysis of business practices in Asia. Emphasis will be on business, government relations, business strategy, structure, organizational processes, and human resource management. 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.

INBU 434. International Trade Field Study. 3 Credits.
An applied field research study to develop an export trade plan which involves market analysis, risk analysis, financing and distribution decisions in overseas markets. 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.

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.
INBU 463. International Business Seminar Abroad. 3 Credits.
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. Prerequisite: a declared major in the University or permission of the Dean's Office.

INBU 495. Topics in International Business. 1-3 Credits.
A study of selected topics, the title of which will appear in the course schedule. Prerequisite: permission of the IB coordinator, and a declared major in the University or permission of the Dean's Office.

INBU 496. Topics in International Business. 1-3 Credits.
A study of selected topics, the title of which will appear in the course schedule. Prerequisite: permission of the IB coordinator, and a declared major in the University or permission of the Dean's Office.

INBU 497. Independent Study in International Business. 1-3 Credits.
Affords students the opportunity to undertake independent study under the direction of a faculty member. Prerequisite: permission of the department.

IPEH - Interprofessional Education-Health

INTERPROFESSIONAL EDUCATION-HEALTH Courses
IPEH 490/590. Social Determinants of Health: An Interprofessional Approach. 3 Credits.
The social determinants of health status and health outcomes, including structural, financial and personal influences will be examined. The utility of an interprofessional collaborative approach to health care delivery will be highlighted. Prerequisite: Junior standing or permission of the instructor.

IT - Information Technology

INFORMATION TECHNOLOGY Courses
IT 150G. Basic Information Literacy and Research. 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 200T. Cybersecurity, Technology, and Society. 3 Credits.
Students will explore how technology is related to cybersecurity from an interdisciplinary orientation. Attention is given to the way that technologically-driven cybersecurity issues are connected to cultural, political, legal, ethical, and business domains.

IT 201. Introduction to Information Systems. 3 Credits.
An introduction to the major hardware/software components of modern information systems. Topics include introduction to the history of computers, numbering systems conversion, system and application software, networks and the Internet. Additional topics include Information Systems and Systems Development Life Cycle, Introduction to Programming, Databases and Business Intelligence, Information Security, and Privacy and Ethics in the cyber world. Intended as a comprehensive introduction course to the Information Systems majors.

IT 205. Introduction to Object-Oriented Programming. 3 Credits.
An introductory course on object-oriented programming that emphasizes top down design and documentation representative of business needs and requirements. The programming language is Java or instructor's choice. Topics include simple data types, input/output streams, control structures and logical expressions, functions, arrays, records, and pointers.

IT 301. Object-Oriented Programming with C++. 3 Credits.
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. Prerequisites: IT 205 or IT 210, and a declared major in the university or permission of the Dean's Office.

IT 315. Introduction to Networking and Security. 3 Credits.
Introduction to modern networking concepts and technology. Provides students with the fundamental concepts, technologies, components and issues related to communications and data networks. Topics include network architectures, infrastructures, services, protocols, cyber attacks, adversaries, and defense. Prerequisites: IT 201.

IT 317. Enterprise Information Architecture. 3 Credits.
A comprehensive treatment of the fundamental concepts of enterprise information architecture. Topics include enterprise architecture, information technology infrastructure, components of modern computing environments, system usability and security. Prerequisites: IT 201 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.

IT 325. Web Site and Web Page Design. 3 Credits.
Advanced design and hands-on implementation skills in designing and creating dynamic web sites. Key topics include: web page design, usability principles, HTML, XHTML, Cascading Style Sheets (CSS), JavaScript and Internet security. Prerequisites: IT 150G.

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. Prerequisites: 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.

IT 363. Systems Analysis and Design. 3 Credits.
This course provides an introduction to the analysis and design of computer-based information systems. Emphasis is placed upon the development of requirements that serve the business needs of the organization as well as the logical and physical design of business information systems. This course covers both the structured and the object-oriented approach of system analysis and design process. Topics covered include introduction to the software development methodologies, requirement gathering, modeling, and logical/physical design techniques. Students are also exposed to emerging topics that promise major improvements in software development area. Factors relevant to the creation of business information systems through development and implementation will be examined in detail. Prerequisites: IT 201 with a C or better, IT 205, and a declared major in the University or permission of the Dean's Office.

IT 367. Cooperative Education. 1-3 Credits.
Approval for enrollment and allowable credits are determined by the department and Career Development Services in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience) Prerequisites: junior standing and a declared major in the university or permission of the Dean's Office.

IT 368. Student Internship. 1-3 Credits.
Approval for enrollment and allowable credits are determined by the department and Career Development Services in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience) Prerequisites: junior standing and a declared major in the university or permission of the Dean's Office.

IT 369. Practicum. 1-3 Credits.
Approval for enrollment and allowable credits are determined by the department and Career Development Services in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience) Prerequisites: junior standing and a declared major in the university or permission of the Dean's Office.
IT 372. COBOL and Applications. 3 Credits.
Introduction to the COBOL programming language and its application in industry and government. Prerequisite: IT 310 and a declared major in the university or permission of the Dean's Office.

IT 374. C# and Applications. 3 Credits.
An introduction to programming concepts and skills of the C# programming language and Visual Studio .NET. Topics include: computing fundamentals and Microsoft .NET platform, C# programming fundamentals and object-oriented programming, web app development and cloud app development. Prerequisite: CS 150 or equivalent.

IT 376. PHP and Applications. 3 Credits.
An introduction to programming concepts and skills of the PHP programming language. Topics include: Internet and web concepts, HTML, CSS and XML, PHP programming basics, database with PHP, PHP web services. Prerequisite: IT 201.

IT 401. Mobile and Cloud Computing. 3 Credits.
An introduction to key concepts and techniques of mobile and cloud computing. Topics include: cloud deployment and service models, cloud programming and software environments, performance and security of cloud systems, cloudlets and mobile cloud computing. Prerequisite: IT 201.

IT 408. E-Business Portal Programming. 3 Credits.
An introduction to key concepts, programming techniques, technologies and standards involved in the development of E-Business portal. Topics include: E-Business programming technologies, software development environments, developing a practical E-business project, securing the E-business portal, performance tuning and evaluation. Prerequisite: IT 325.

IT 410. Business Intelligence. 3 Credits.
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. Prerequisite: BNAL 206.

IT 416. Network Server Configuration and Administration. 3 Credits.
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. Prerequisites: A grade of C or better in IT 315 and a declared major in the university or permission of the Strome College of Business Dean’s Office.

IT 417. Management of Information Security. 3 Credits.
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. Prerequisites: A grade of C or better in IT 315 or IT 360T and a declared major in the university or permission of the Strome College of Business Dean’s Office.

IT 418. Information Assurance. 3 Credits.
Assure information and manage risks related to the use, processing, storage, and transmission of information. Topics include assurance of integrity, availability, authenticity, non-repudiation and confidentiality. Students will gain a firm understanding of information-related risk management in cyber and physical systems. Hands-on exercises and practice opportunities will be provided to students. Prerequisites: A grade of C or better in IT 315 and a declared major in the university or permission of the Deans Office.

IT 419. Enterprise Cyber Defense. 3 Credits.
Provide students with an awareness of the options available to mitigate security threats in enterprise information systems. Topics include network mapping, network security techniques and components, applications of cryptography, malicious activity detection, countermeasures, and vulnerability scanning. Students will learn how to describe potential attacks, defense tools and methods, and measures to be taken when compromises occur. Prerequisites: A grade of C or better in IT 315 and a declared major in the university or permission of the Deans Office.

IT 420. Object-Oriented Application Development Using Visual Basic. 3 Credits.
Advanced design and implementation strategies are utilized to create dynamic client/server applications that solve complex problems in a secure and robust manner. Key concepts include: abstractions, encapsulation, inheritance, polymorphism, persistence, and dynamic binding. Prerequisites: IT 205 and a declared major in the university or permission of the Strome College of Business Dean's Office.

IT 425. Information Systems for International Business. 3 Credits.
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. Prerequisites: The general education impact of technology requirement, a declared major in the university or permission of the department.

IT 430/530. Object-Oriented Application Development with JAVA. 3 Credits.
Using JAVA as an object-oriented language to write business applications that solve complex problems in a secure and robust manner. 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. Prerequisites: IT 205 and a declared major in the university or waiver approved through the Strome College of Business Undergraduate Advising.

IT 440. Secure Programming. 3 Credits.
An introduction to methods of secure software design and development. Key topics include principles and practices of secure programming, input validation, type checking, parameter validation, buffer overflow prevention, error handling, web application issues (SQL injection, Cross site scripting, Cross site request forgery, etc.), static analysis tools and black box testing tools. Prerequisite: IT 205.

IT 450. Database Concepts. 3 Credits.
Introduction to database concepts. Historical development, data models, database analysis, design and implementation, query languages, data security, and introduction to business transaction systems. Prerequisites: IT 201 with a C or better or IT 360T for non-IT major students and a declared major in the university or waiver approved through the Strome College of Business Undergraduate Advising; permission of the instructor is required for non-IT major students.

IT 451. Database Administration. 3 Credits.
An introduction to the theory and practice for performing the standard database administrative tasks. Course could serve as a basis in preparation for OCA Exams 1Z0-051 and 1Z0-052 for Oracle Administrator Certified Associate. Topics to be covered include: advance SQL statements, creating schema objects, database installation and configuration, database architecture, performance monitoring and tuning, storage management, database security, user management, database connectivity, backup/recovery techniques and usage analysis. Oracle will be the primary DBMS software used in the course; other software may be used as well. Hands-on exercises and practice opportunities will be provided to students. Prerequisites: IT 450, and a declared major in the university or permission of the instructor.

IT 452. Cloud Database. 3 Credits.
An introduction to the principles, techniques, and systems of cloud database. Topics include: cloud service models, cloud database design, cloud database management, cloud database development, cloud security, and cloud database services. Prerequisite: IT 450 or instructor approval.
IT 453. Advanced Database Concepts. 3 Credits.
This course examines the theoretical and practical foundations of advanced database concepts. It also covers techniques and methodologies that are used to perform the advanced database management tasks and to insure the deployment of efficient, secure, and high-performance database applications. Topics include: advanced database and application design, database performance tuning and query optimization, data movement and distribution, distributed DBMS, Business Intelligence and Data Warehouses, Big Data Analytics and NoSQL, databases and the Internet, and other advanced database concepts. This course also examines the material included in OCA Exams 1Z0-051 and 1Z0-052 for Oracle Administrator Certified Associate. Prerequisites: IT 450 and a declared major in the university or permission of the instructor.

IT 454. Web-based Database Administration. 3 Credits.
An introduction to key concepts and techniques related to web-based database administration. Students will gain hands-on experience with a variety of web-based database technologies. Topics to be covered include: MySQL, EasyPHP, phpMyAdmin, XML database technologies such as XQuery, XPath, and XML Schemas, performance tuning, trouble shooting, and web log analysis tools. Prerequisite: IT 450, or permission of the instructor.

IT 455. SAP Applications. 3 Credits.
This course introduces students to the concept of enterprise resource planning. Students will learn SAP (Systems, Applications and Products in Data Processing) enterprise software to manage business operations and customer relations by analyzing and presenting data in an engaging way, and producing meaningful and insightful business solutions. Prerequisite: IT 201, or IT 360T, or OPMT 303, or instructor's permission.

IT 461. Implementing Internet Applications. 3 Credits.
Advanced design and implementation strategies are utilized to create dynamic e-commerce applications that solve complex problems in a secure and robust manner. Key concepts include: Internet architecture, structured data languages, scripting languages, programming languages, database connectivity, and Internet security. Prerequisites: IT 205, IT 317, and IT 363 and a declared major in the university or waiver approved through the Strome College of Business Undergraduate Advising.

IT 464. Project Management in Information Systems. 3 Credits.
This course focuses on project management techniques and methodologies that can be adopted to Information Technology software and systems projects. Prerequisites: IT 317 with a C or better, IT 363, and a declared major in the university or waiver approved through the Strome College of Business Undergraduate Advising.

IT 474. Strategic IT Administration. 3 Credits.
Focusses on improving business use of existing IT and achieving competitive advantage. All students gain a strategic perspective on an important organizational resource—information. Prepares IT students for managerial positions and effective communication with executives. Prerequisites: IT 317 with a C or better, IT 363, and a declared major in the university or waiver approved through the Strome College of Business Undergraduate Advising.

IT 494. Entrepreneurship in Information Technology. 3 Credits.
This course is designed to help students enhance their personal and professional development through real-world entrepreneurial innovation guided by faculty members and professionals. This course allows students to integrate disciplinary knowledge by developing innovative processes, products, businesses, or other innovations utilizing information technology. The real-world entrepreneurial experience will help students understand how academic knowledge leads to innovation and problem solving. Prerequisite: six credit hours of any IT 300 or 400 level courses.

IT 495/595. Selected Topics in Information Systems. 1-3 Credits.
Taught on an occasional basis. See the course schedule for the particular topic being taught each semester. Prerequisite: permission of the department.

IT 497. Independent Study in Information Systems. 1-3 Credits.
Affords students the opportunity to undertake independent study under the direction of a faculty member. Prerequisite: permission of the department.

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.

ITAL 102F. Beginning Italian II. 3 Credits.
Aural comprehension, oral drill and discussion of grammar principles; written exercises, and reading assignments. Prerequisite: ITAL 101F.

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.
A study of selected topics for elective credit. These courses will appear in the course schedule. Prerequisite: ITAL 202 or equivalent.

ITAL 396. Topics in Italian. 1-3 Credits.
A study of selected topics for elective credit. These courses will appear in the course schedule. Prerequisite: ITAL 202 or equivalent.

JAPN - Japanese
JAPANESE Courses
JAPN 111F. Beginning Japanese. 6 Credits.
This course introduces basic speaking, listening, reading, and writing skills, including the three forms of written Japanese: Hiragana, Katakana, and Kanji. Students will have the opportunity to interact with Japanese students on campus through the coursework. The course enhances speaking and listening skills and provides awareness of the Japanese style of communication. Analyzing Japanese sentence structures and grammar leads students to be aware of the different value systems of a high context culture.

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.
The main focus of this course is to build communication skills, developing the basic language skills acquired in JAPN 111F. Students may have an opportunity to exchange emails with a Japanese speaker in addition to direct or online conversation. Through this interaction, skills to negotiate meaning are gained. Use of authentic TV materials introduces pragmatic features that are unique to Japanese. Through systematic explicit instruction of the skills using pragmatic elements, skills for a Japanese style of communication are enhanced. Prerequisites: JAPN 111F.

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 introduces the basic structure of kanji, which is one of the forms of written Japanese, and the history behind its creation as well as cultural aspects of kanji usage in Japanese society. Identifying radicals or parts of kanji, and understanding the system of Kanji compounds, makes it possible to easily guess the meaning of kanji characters. Advanced reading skills are efficiently developed by guessing the meaning of kanji. Daily journal writing on authentic novels or newspaper articles builds vocabulary and enhances flexibility with reference materials. Prerequisites: JAPN 212.

JAPN 310. Japan: A Cultural Odyssey. 3 Credits.
Exploration of Japanese culture and society from local and global perspectives. Topics may include language, arts, literature, music, food, traditional and contemporary culture, entertainment, media, religion, gender, education and work. The course aims to foster in-depth cultural understanding beyond stereotypes and to develop critical thinking and analytical skills to reflect on one's own experiences and assumptions about cultural similarities and differences. All readings, discussions, and lectures in English. No knowledge of Japanese is necessary. Cross-listed with WCS 310. Prerequisites: ENGL 110C and junior standing or permission of the instructor.

JAPN 311. Communicative Competence: Speaking and Listening. 3 Credits.
The primary objective of this course is to increase fluency in spoken Japanese and to make the students aware of cultural difference. The different modules are designed to enrich the students' knowledge of the language and the culture. An oral presentation in a small group gives students the opportunity to practice communication skills unique to the Japanese language, which is a high context culture. Advanced speaking and listening skills are developed through interviews with exchange students from Japan. Advanced written communication skills are gained through dynamic information exchange activities to learn about Japanese students on campus. Prerequisite: JAPN 212 with a grade of C or above or a satisfactory score on the placement test.

JAPN 312. Communicative Competence: Writing and Reading. 3 Credits.
The primary objective of this course is to strengthen communication skills in spoken and written Japanese in formal/semi-formal contexts as well as to lead students to reflect on their own culture(s) critically. Special emphasis is placed on the different levels of honorific language use, which may not be found in the students' society. Cultural and social topics are explored through authentic materials to familiarize students with knowledge of Japan and its diverse people. Insightful cultural awareness is gained through the process of making appointments and conducting online interviews with a person in Japan. Prerequisites: JAPN 212 with a grade of C or above or a satisfactory score on the placement test.

JAPN 395. Topics in Japanese. 1-3 Credits.
This course provides a study of selected topics in Japanese. Topics vary with the semester and the instructor. Expectations for materials covered and produced for the class vary with the level (higher-level classes will have higher expectations). Contact the Japanese Program Coordinator for details about specific topics covered in a given semester. 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.
This course provides a study of selected topics in Japanese. Topics vary with the semester and the instructor. Expectations for materials covered and produced for the class vary with the level (higher-level classes will have higher expectations). Contact the Japanese Program Coordinator for details about specific topics covered in a given semester. 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 300. Holocaust and Genocide Studies. 3 Credits.
After the atrocities of the Holocaust, "Never again!" has been repeated throughout the world. However, the reality is that genocide did not begin or end with the Holocaust. This course uses the Holocaust as a case study in genocide, tracing the history of anti-Judaism and anti-Semitism in Europe through its reappropriation by Adolf Hitler. Through an interdisciplinary approach to the Holocaust where history, literature, film, and oral narratives are considered, students establish a basis for critiquing and understanding other genocides. The course will culminate with an analysis of contemporary genocide, taking into consideration how the genocides and the Holocaust inform our worldview of hatred and impact societies and cultures. Prerequisite: Grade of C or better in ENGL 110C.

JST 350. Judaism. 3 Credits.
This course is a basic introduction to Judaism. We will explore the fundamental tenets of Jewish belief, examine primary expressions of Jewish ritual and practice, discuss the historical development of Judaism, and explore sacred texts, secular Yiddish texts, and contemporary issues confronting Jews and Judaism. Prerequisite: ENGL 110C.

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, 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.
LIBS - Library Science

LIBRARY SCIENCE Courses

LIBS 110G. Information Literacy for the Digital Age. 3 Credits.
Students require a comprehensive understanding of information literacy so they can become effective users of ideas and information and guide others in activities of knowledge use and creation. This course will provide an introduction to the process and methods of retrieving information using digital literacies. Students will learn to identify an information need, then locate, evaluate, and use appropriate resources while embedding the dispositions of academic integrity and ethical use. Topics include use of collaborative tools for development of information, including social media. The content focuses on implementing effective digital information literacy strategies situated in various content areas with the intent that these strategies can be incorporated into future professional and instructional practices.

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 with a grade of C or better.

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 or ENGN 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. Prerequisite: MATH 211 with a grade of C or better. Pre- or corequisite: PHYS 231N.

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. Prerequisite: 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. Prerequisite: A grade of C or better in MAE 204 or CEE 204.

MAE 225. Mechanical Engineering Laboratory II - Solid Mechanics. 1 Credit.

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.

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. Prerequisite: Junior standing. 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.

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 336. Electromechanical Systems. 3 Credits.
Introduction to analog and digital circuits; sensors, actuators and signals; laboratory instrumentation (oscilloscope, function generator, etc.); data acquisition; and embedded microcontroller systems. Students will perform electronics experiments as homework assignments. Prerequisites: CS 150 or ENGN 150 and PHYS 232N.

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: ENGN 150 or CS 150, MATH 307 and MATH 312.
MAE 386. 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. Prerequisites: Approval by department and Career Development Services.

MAE 389. 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. Prerequisites: Approval by department and Career Development Services.

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 303 with a grade of C or better and MAE 340. Pre- or corequisite: 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 isotropic 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 with a grade of C or better.

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 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, a grade of C or better in MAE 332, and MATH 312 or MATH 285.

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. Prerequisites: A grade of C or better in 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. This is a writing intensive course. Prerequisites: A grade of C or better in MAE 332, ENGL 211C or ENGL 221C or ENGL 231C. Pre- or corequisite: MAE 433.

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. 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; MAE 336, 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. Prerequisite: a grade of C or better in 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: ENGR 150 or 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 with a grade of C or better.

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 racers. Prerequisites: A grade of C or better in MAE 205 or MET 310.

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 racers (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 303 with a grade of C or better, or MET 330 and MAE 205 with a grade of C or better, or MET 310.

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 100. The Math Cooperative. 0 Credits.
This course provides support and preparation in math for students who suffer from math anxiety, have math SAT scores of 450 or below or have not taken a math course in over a year. The goal of this course is to build students' confidence in their math abilities in order to help them be successful in math.

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 finding solutions, graphing of linear equations and inequalities, graphs and functions, combining polynomials and polynomial functions, factoring polynomials, simplifying and combining rational expressions and equations, simplifying roots and radicals, solving radical equations, and an introduction to quadratic functions and equations. 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 205. Calculus for Life Sciences. 3 Credits.
This course covers the standard topics of first semester calculus including limits, derivatives and integrals. All examples for this course are drawn from biological sciences with specific applications to topics covered in the core courses of the undergraduate Biology major. Prerequisite: 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. A dynamic geometry visualization software is 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 include 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. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 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 Development Services prior to the semester in which the work experience is to take place. Available for pass/fail grading only. May be repeated for credit. Prerequisite: approval by the department and Career Development Services 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. Ordinary Differential Equations. 3 Credits.
Topics in Mathematics. 1-3 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; rainsbows, 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 494. Entrepreneurship in Mathematics. 3 Credits.
Entrepreneurships provide will help students understand how academic knowledge leads to transformations, innovations, and solutions to different types of problems. This course is administered as an independent project for individual students, or as group projects. Prerequisites: 3.0 GPA and permission of the chief departmental advisor.

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.

MATH 422/522. Applied Complex Variables. 3 Credits.
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. Ordinary Differential Equations. 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.
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. Prerequisite: acceptance to the medical laboratory science major, cytotechnology major, or molecular diagnostics certificate program.

MET - Mechanical Engineering Technology

MECHANICAL ENGINEERING TECHNOLOGY Courses

MET 120. Computer Aided Drafting. 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.
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 230. Engineering Graphics for Mechanical Engineering Design. 3 Credits.
Graphical communication for engineers studies the concept of 3D parametric modeling and its application in industry. In this course students will learn the fundamentals of sketching, basics of surface design, assembly modeling, and dynamic modeling of mechanisms using industry standard parametric modeling software. Emphasis on developing the skills needed for engineering design. Prerequisite: Must be a mechanical engineering major.

MET 240. Computer Solid Modeling. 3 Credits.
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. Prerequisites: MET 120.

MET 295. Topics. 1-3 Credits.
Study of selected topics.

MET 300. Thermodynamics. 3 Credits.
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. Prerequisites: CHEM 121N, MATH 211, and PHYS 111N or PHYS 231N.

MET 305. Fundamentals of Mechanics. 3 Credits.
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. Prerequisites: PHYS 111N and MATH 211.

MET 310. Dynamics. 3 Credits.
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. Prerequisites: MATH 211, CET 200, and PHYS 111N or PHYS 231N.

MET 320. Design of Machine Elements. 3 Credits.
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. Prerequisites: MATH 211, a grade of C or better in CET 220 and PHYS 111N or PHYS 231N.

MET 330. Fluid Mechanics. 3 Credits.
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. Prerequisites: MET 310.

MET 335W. Fluid Mechanics Laboratory. 1 Credit.
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. This is a writing intensive course. Prerequisite: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C. Pre- or corequisite: MET 330.

MET 350. Thermal Applications. 3 Credits.
A study of the applications of thermodynamics. Topics include the basic steam and gas turbine power cycles, internal combustion engines, introduction to refrigeration systems, gas mixtures, and psychrometrics applied to air conditioning processes. Prerequisites: MET 300 with a grade of C or better.

MET 367. Cooperative Education. 1-3 Credits.
May be repeated for credit. 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 Development Services program prior to the semester in which the work experience is to take place. (offered fall, spring, summer) Prerequisites: approval by the department and Career Development Services in accordance with the policy for granting credit for Cooperative Education programs.

MET 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. Prerequisites: approval by department and Career Development Services.

MET 369. Practicum. 1-3 Credits.
Available for pass/fail grading only. Prerequisites: approval by department and Career Development Services.

MET 370. Automation and Controls. 3 Credits.
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. Pre- or corequisite: EET 350. Prerequisite: MATH 211.

MET 386. Automation and Controls Laboratory. 1 Credit.
Laboratory and computer simulation of control systems including programmable controllers as well as practical applications of interfacing mechanical, electrical and pneumatic control systems. Pre- or corequisite: MET 370.

MET 387. Power and Energy Laboratory. 2 Credits.
Experiments dealing with applied thermodynamics, mechanical power and energy systems with emphasis on laboratory report writing, including presentation and interpretation of experimental data. Prerequisites: MET 335W and MET 350.

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.
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. Prerequisites: Senior standing.
MET 405. Introduction To Welding Technologies. 3 Credits.
An introduction to conventional and non-conventional welding processes. This course is intended to provide the student with a basic understanding of the various welding processes, welding terminology, joints, symbols, welding defects, equipment. Topics covered include welding processes, heat and fluid flow, structure of metals, solidification phenomena, phase transformations, residual stresses, and nondestructive examination techniques. Real life examples will be used to illustrate the fundamental concepts of the course. The student will also be introduced to career opportunities in the welding field. Lab time will be used to enforce lecture topics when needed. Prerequisite: MET 200.

MET 410. Advanced Manufacturing Processes. 3 Credits.
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) Prerequisite: MET 200.

MET 415. Introduction to Robotics. 3 Credits.
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. Prerequisites: MET 310 and EET 350.

MET 420. Design for Manufacturing. 3 Credits.
Principles of design for manufacturing, materials and process selection for design, design for assembly, design for production and case studies. Also includes impact of product design, design for maintenance, recyclability, disassembly, quality and robustness. Semester project requires redesign of an existing product for manufacturing. Prerequisite: MET 200.

MET 426. Introduction to Mechatronics. 3 Credits.
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. Prerequisites: EET 355 or MAE 225.

MET 427. Mechatronic System Design. 3 Credits.
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. Prerequisites: EET 355 or MAE 225.

MET 430. Mechanical Subsystem Design. 3 Credits.
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. Prerequisites: MET 320.

MET 431. Modeling and Simulation of Mechatronic Systems. 3 Credits.
The course provides foundations, principles, methods, and tools for modeling and simulation of electro-mechanical components and systems using appropriate modeling techniques. The course is focused on the multi-body dynamics systems, fluid, hydraulic, and electrical systems. Prerequisite: Senior standing.

MET 440. Heat Transfer. 3 Credits.
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. Prerequisite: MET 300.

MET 445. Computer Integrated Manufacturing. 3 Credits.
Principles of computer integrated manufacturing, system integration, architecture and data base development. Topics include part design specifications, process engineering, fixed automation and process planning. Prerequisites: senior standing.

MET 450. Energy Systems. 3 Credits.
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. Prerequisites: MET 350.

MET 455. Lean Engineering. 3 Credits.
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. Prerequisites: Senior standing.

MET 460. Refrigeration and Air Conditioning. 3 Credits.
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. Prerequisites: MET 330 and MET 350.

MET 465. Geometric Dimensioning and Tolerancing. 3 Credits.
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. Prerequisites: Senior Standing.

MET 471. Nuclear Systems I. 3 Credits.
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. Prerequisites: MATH 211 and PHYS 111N.

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 474. Naval Architecture I. 3 Credits.
This course includes fundamentals of ship and marine vessel design, including ship geometry, hydrostatics, intact and damage stability, marine structures, resistance and propulsion, and shipbuilding and construction of marine vessels. Students will learn how these topics apply to naval and commercial ships, sailing vessels, and recreational small craft. Prerequisites: MAE 220 or CET 220, MAE 303 or CEE 330 and MET 330.

MET 475. Marine Engineering I. 3 Credits.
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. Prerequisites: MET 330 and MET 350.

MET 476. Marine Engineering II. 3 Credits.
This course builds upon MET 475 and provides a more in-depth look on how the marine shipbuilding industry is using various software including SIEMENS PLM, 3D CAD modeling and new technologies like laser scanners and augmented reality to reshape the future of shipbuilding, maintenance, and repair processes. Focus will be based on model-based learning and creating a “digital thread” of information. Students will practice what they learn on shipbuilding concepts using commercial software that is widely used across automotive, aerospace, and marine industries. Prerequisites: MET 475.
MET 480. 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. (cross-listed with MAE 477/MAE 577) Prerequisite: MET 350 or MAE 312.

MET 485. Maintenance Engineering. 3 Credits.
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. Prerequisites: ENGT 305 and MET 200.

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.
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. Prerequisites: A declared major in the University or an intended major in the Strome College of Business or permission of the Dean's Office of the Strome College, AND Junior Standing.

MGMT 327. Business Communication. 3 Credits.
This course is an introduction to the importance and centrality of communication in business. Students will learn the application of business communication principles by working both individually and collaboratively on communicating through effective business documents, presentations, professional written and oral correspondence, and use of digital media. Attention will be given to both interpersonal and group audiences, as well as formal and informal delivery. Prerequisite: MGMT 325.

MGMT 330. Organizational Behavior. 3 Credits.
This class examines theories and concepts pertaining to people at work. Topics include personality differences, motivation principles, high-performing work teams, and leadership development. Prerequisite: Junior standing. Pre- or corequisite: MGMT 325.

MGMT 340. Human Resources Management. 3 Credits.
This class examines all issues pertaining to managing people in an organization. Topics include strategic planning for Human Resources, recruitment and selection systems, performance evaluation and development programs, Equal Employment Opportunity, and diversity management. Prerequisites: MGMT 325, Pre- or corequisite: MGMT 330.

MGMT 350. Employee Relations Problems and Practices. 3 Credits.
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. Prerequisite: junior standing, and a declared major in the University or permission of the Dean's Office.

MGMT 360. Labor Management Relations. 3 Credits.
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. Prerequisites: MGMT 340, and a declared major in the University or permission of the Dean's Office.

MGMT 361. International Business Operations. 3 Credits.
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. Prerequisites: FIN 323, MKTG 311 and MGMT 325, and a declared major in the University or permission of the Dean's Office.

MGMT 367. Cooperative Education. 1-6 Credits.
May be repeated for credit. 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 Development Services prior to the semester in which the work experience is to take place. Prerequisites: MGMT 325 and approval by the department and Career Development Services, 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.

MGMT 368. Management Internship. 1-3 Credits.
Approval for enrollment and allowable credits is determined by the department and the Career Development Services in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience) Prerequisites: MGMT 325, and a declared major in the University or permission of the Dean's Office.

MGMT 369. Management Practicum. 1-3 Credits.
Approval for enrollment is determined by the Management CAP advisor and the Career Development Services in the semester prior to enrollment. Student will participate in a relevant work setting. (qualifies as a CAP experience) Prerequisites: MGMT 325, and a declared major in the University or permission of the Dean's Office; transfer students must have completed one semester at Old Dominion University.

MGMT 417/517. Employment Law. 3 Credits.
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. Prerequisite: junior standing and MGMT 325 or MGMT 602, and a declared major in the University or permission of the Dean's Office.

MGMT 418. Advanced Human Resources Management: Contemporary Issues. 3 Credits.
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. Prerequisites: junior standing and MGMT 325 and MGMT 340, and a declared major in the University or permission of the Dean's Office.

MGMT 420. Business Development. 3 Credits.
Course focuses on assessing the strategies, tactics, dilemmas, processes and solutions associated with developing a new business. Emphasis is devoted to how new ventures should raise rates (sales, prices, productivity), decrease costs, promote and execute while pursuing innovation. The course explores a wide variety of actual small business case studies to illuminate the critical strategic, operational and behavioral considerations necessary to build a successful enterprise, including rollouts (duplicating a business model in multiple locations), rollups (acquiring similar businesses to accelerate growth), and franchises. Prerequisites: MGMT 325 and ACCT 201.

MGMT 426. Entrepreneurship: New Ventures Creation. 3 Credits.
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. Prerequisites: MGMT 325, MKTG 311, and ACCT 201, and a declared major in the University or permission of the Dean's Office.
MGMT 427. Business and Society. 3 Credits.
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. 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.

MGMT 430. Compensation Management. 3 Credits.
This class examines issues pertaining to developing, evaluating, and redesigning an organization's direct and indirect compensation systems. Topics include pay structure, incentive plans, benefit programs, and special cases such as executive compensation. Prerequisites: Senior standing, MGMT 325, a C- or higher in MGMT 340, and a declared major in the University or permission of the Dean's Office.

MGMT 440. Human Resource Staffing Strategies. 3 Credits.
This course examines the strategic recruitment, selection, and development of top talent in organizations. Discussion topics include understanding and planning for talent needs, use of current recruitment methods and selection techniques, development of both internal and external talent pools, and the influences of external and internal changes due to competitive business environments and job design/redesign initiatives. The strategic and legal context of employment decision making is emphasized. Prerequisites: MGMT 325, MGMT 330, and MGMT 340.

MGMT 450. Performance Measurement and Management. 3 Credits.
The role of performance management (PM) systems (performance measurement, appraisal, and development) is critical to organizational and workers success. This course focuses on how an effective PM system created in alignment with an organization's strategy, mission, values, and product or services, can attract, develop, and retain top-performers. We will discuss how PM systems are tied to reward systems and will examine the legal regulations to which an organization must adhere. Topics include performance appraisals, coaching, feedback, reward systems, and related management activities. Prerequisites: MGMT 325, MGMT 330, and MGMT 340.

MGMT 452/552. Negotiations and Change Management. 3 Credits.
This course focuses on negotiations and change. Students will develop analytical, interpersonal, and communication skills, with an emphasis placed on experiential learning through case studies, role playing, and simulations. Prerequisite: MGMT 325 or permission of the Dean's Office.

MGMT 462. Comparative International Management. 3 Credits.
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. Prerequisites: senior standing and MGMT 325, and a declared major in the University or permission of the Dean's Office.

MGMT 463/563. Management Seminar Abroad. 3 Credits.
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. Prerequisite: permission of the chief departmental advisor, and a declared major in the University or permission of the Dean's Office.

MGMT 485W. Business Policy and Strategy. 3 Credits.
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. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; senior standing, FIN 323, MGMT 325, MKTG 311, and a declared major in the University or permission of the Dean's Office.

MGMT 495/595. Selected Topics in Management. 3 Credits.
Designed to provide advanced students in management an opportunity to study administration in highly specialized areas under the guidance of a faculty member. Prerequisite: permission of the chief departmental advisor/graduate program director.

MGMT 497. Independent Study in Management. 3 Credits.
Designed to provide advanced students in management an opportunity for independent study of selected areas under the guidance of a faculty member. Prerequisite: permission of the chief departmental advisor, and a declared major in the University or permission of the Dean's Office.

MIDE - Middle Eastern Studies

MIDDLE EASTERN STUDIES Courses

MIDE 395. Topics in Middle Eastern Studies. 3 Credits.
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. Prerequisite: junior standing or permission of instructor.

MIDE 405. 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 to be studied include myths, religion, family structures, and the use of science and technology. Prerequisite: three hours of lower level social science.

MIDE 495. Topics in Middle Eastern Studies. 3 Credits.
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. Prerequisite: junior standing or permission of instructor.

MKTG - Marketing

MARKETING Courses

MKTG 311. Marketing Principles and Problems. 3 Credits.
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. Prerequisites: A declared major in the University or an intended major in the Strome College of Business or permission of the Dean's Office of the Strome College, AND Junior Standing.

MKTG 367. Cooperative Education. 1-3 Credits.
May be repeated for credit. 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 Development Services prior to the semester in which the work experience is to take place. Prerequisites: C or better in MKTG 311 (or equivalent) and approval by the instructor and Career Development Services in accordance with the policy for granting credit for Cooperative Education programs.

MKTG 368. Marketing Internship. 1-3 Credits.
Student completes a relevant marketing experience in the marketplace after submitting a job description, learning objectives, and task accomplishments. Prerequisites: C or better in MKTG 311 (or equivalent) and approval of instructor.

MKTG 369. Practicum. 1-3 Credits.
Practicum experience in marketing. Prerequisites: C or better in MKTG 311 (or equivalent) and approval of instructor.

MKTG 402. Consumer Behavior. 3 Credits.
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. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office.
MKTG 403. Advertising Strategy. 3 Credits.
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. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office.

MKTG 404. Sales Management. 3 Credits.
Material focuses on quantitative and qualitative goal setting; management, control and evaluation of the sales program; selecting, training, motivating, and evaluating the sales force. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office.

MKTG 405. The Art of Influence and Persuasion. 3 Credits.
This course is an introductory course on techniques and concepts on how to influence in a variety of business settings. Influence and persuasion is used daily in businesses throughout the world. Effective influence and persuasion can be the determining factor in successful business engagements. This course will develop students' influence and persuasion skills through oral and written communications. It will cover the underlying psychological mechanism of persuasion, the entire influence and persuasion process, influencing and persuading individuals as well as organizations in a business setting, and the ethical issues in influence and persuasion. Prerequisites: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the Strome College of Business or permission of the instructor.

MKTG 406. Public Relations. 3 Credits.
For non-business as well as business majors. Development and application of a philosophy of business expressed in governmental, corporate, social or educational institutions in furthering their public image. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office.

MKTG 407. Marketing Research. 3 Credits.
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) 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.

MKTG 411. Multi-National Marketing. 3 Credits.
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. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office.

MKTG 412. Retail Marketing. 3 Credits.
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. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office.

MKTG 414. Ethics and Social Issues in Administration. 3 Credits.
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. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office.
MSCM - Maritime and Supply Chain Management

MARITIME AND SUPPLY CHAIN MANAGEMENT Courses

MSCM 368. Maritime and Supply Chain Internship. 1-3 Credits.
Approval for enrollment and allowable credit is determined by the Business Analytics CAP advisor and the Career Development Services in the semester prior to enrollment. Prerequisites: MSCM 370 and MSCM 441, and a declared major in the University or permission of the Dean's Office.

MSCM 370. International Shipping. 3 Credits.
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. Prerequisite: junior standing or permission of the instructor.

MSCM 415. Maritime Security and Risk Analysis. 3 Credits.
An overview of an 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. Prerequisite: MSCM 370.

MSCM 430/530. Strategic Sourcing and Purchasing Management. 3 Credits.
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. Prerequisites: ACCT 202, BNAL 206, OPMT 303, and a declared major in the University or permission of the Dean's Office.

MSCM 439. Quality Management. 3 Credits.
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. Prerequisites: OPMT 303 and a declared major in the University or permission of the Strome College of Business Dean's Office.

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). Prerequisites: OPMT 303, and a declared major in the University or permission of the Dean's Office.

MSCM 445. Marine Insurance. 3 Credits.
An introduction to the fundamentals of cargo, hull, protection and indemnity insurance. Topics include insurance markets, agents, underwriters, forms of policies, valuation, Total Loss, Particular Average, General Average, insured perils, war risks, subrogation, reinsurance and insurers of pollution liabilities. Prerequisites: MSCM 370.

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. Prerequisites: OPMT 303.

MSCM 471. Shipping Management. 3 Credits.
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. Prerequisites: For MSCM majors, the prerequisite is MSCM 370; for other business majors, the prerequisites are ECON 201S and ECON 202S; for nonbusiness majors, the prerequisites are ECON 201S and ECON 202S or permission of the instructor; all students must have a declared major or permission of the College of Business dean's office.

MSCM 472. Port Management. 3 Credits.
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. Prerequisites: For MSCM majors, the prerequisite is MSCM 370; for other business majors, the prerequisites are ECON 201S and ECON 202S; for nonbusiness majors, the prerequisites are ECON 201S and ECON 202S or permission of the instructor; all students must have a declared major or permission of the College of Business dean's office.

MSCM 473. Inland Waterway and Intermodal Transportation. 3 Credits.
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. Prerequisite: MSCM 370.

MSCM 494. Entrepreneurship in Maritime and Supply Chain Management. 3 Credits.
This course is designed to help students enhance their personal and professional development through innovation guided by faculty members and professionals. The course offers students an opportunity to integrate disciplinary theory and knowledge through developing a supply chain process, product, business, or other initiative. The real-world experiences that entrepreneurship provide will help students understand how academic knowledge leads to transformations, innovations, and solutions to different types of problems. Prerequisites: MSCM 370 and OPMT 303.

MSCM 495/595. Topics in Maritime and Supply Chain Management. 3 Credits.
A study of selected topics within Maritime and Supply Chain Management designed to provide an in-depth exploration of current issues. Prerequisites: permission of the instructor, and a declared major in the University or permission of the College of Business Dean's Office.

MSCM 497. Independent Study. 3 Credits.
Affords students the opportunity to undertake independent study under the direction of a faculty member. Prerequisites: permission of the department, and a declared major in the University or permission of the College of Business Dean's Office.
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. Prerequisites: MATH 211 with a C or better and PHYS 231N with a C or better. Pre- or corequisite: CS 150 or ENGN 150.

MSIM 205. Discrete Event Simulation. 3 Credits.

An introduction to the modeling and simulation of discrete-state, event-driven systems. Topics include: basic properties and terminology for discrete event systems (DES); models for DES including queuing models, Petri nets, and state automata; and methodologies for simulating DES models. Investigation of the steps of a DES simulation study including problem formulation, conceptual model design, simulation model development, input data modeling, output data analysis, verification and validation, and 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 is 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, and numerical integration techniques including Taylor series, families of Runge-Kutta and Adams methods. Application domains considered include physical, biological, electrical systems, and real-time simulations. Corequisite: MSIM 382. Prerequisite: MSIM 201. Pre- or corequisite: MATH 307 (or MATH 280) and 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 Development Services prior to the semester in which the work is to take place. Prerequisites: approval by department and Career Development Services.

MSIM 368. 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. Prerequisites: approval by department and Career Development Services.

MSIM 369. Practicum. 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. Prerequisites: approval by the department and Career Development Services.

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. 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. 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 411/511, Networked System Security. 3 Credits.
Course presents an overview of theory, techniques and protocols that are used to ensure that networks are able to defend themselves and the end-systems that use networks for data and information communication. Course will also discuss industry-standard network security protocols at application, socket, transport, network, VPN, and link layers, popular network security tools, security, performance modeling and quantification and network penetration testing. Discussion will be based on development of system level models and simulations of networked systems. Cross-listed with ECE 411. Prerequisites: CS 150 or ENGN 150 and junior standing or permission of the instructor.

MSIM 416/516. Cyber Physical Systems Security. 3 Credits.
This introductory class will provide the student with a basic understanding of the mathematical foundations and algorithmic concepts needed to become competent at implementing game physics engines. We will emphasize the mathematical foundations that apply to many areas of simulation, which subsumes the mathematics of game physics, such as linear algebra emphasizing vectors and matrices, as well as introductory vector calculus. This class will also exploit open-source C++ software implemented by the methods 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 417/517, Secure and Trusted Operating Systems. 3 Credits.
Course will review typical operating systems developing system models and identifying potential vulnerabilities. Course will discuss policies and their implementation required to fix such vulnerabilities to arrive at a secure and trusted Computing Base. Course examines the security architecture Security Enhanced Linux (SELinux) Windows and Android OS. Cross-listed with ECE 417. Prerequisites: MSIM 416.

MSIM 419/519, Cyber Physical Systems Security. 3 Credits.
Cyber Physical Systems (CPS) integrate computing, networking, and physical processes. The objectives of this course are to learn the basic concepts, technologies and applications of CPS, understand the fundamental CPS security challenges and national security impact, and gain hands-on experience in CPS infrastructures, critical vulnerabilities, and practical countermeasures. Cross-listed with ECE 419/CYSE 419. Prerequisites: CS 150 or ENGN 150.

MSIM 440/540, Game Physics Modeling and Simulation. 3 Credits.
This introductory class will provide the student with a basic understanding of the mathematical foundations and algorithmic concepts needed to become competent at implementing game physics engines. We will emphasize the mathematical foundations that apply to many areas of simulation, which subsumes the mathematics of game physics, such as linear algebra emphasizing vectors and matrices, as well as introductory vector calculus. This class will also exploit open-source C++ software implemented by the book of the textbook. Prerequisites: MSIM 320 and CS 250.

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.
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/ECE 562.

MSIM 463/563. Design and Modeling of Autonomous Robotic Systems. 3 Credits.
This 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. Prerequisites: CS 150 or ENGN 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 474/574, Transportation Data Analytics. 3 Credits.
This course presents the basic techniques for transportation data analytics. It will discuss statistical modeling, prominent algorithms, and visualization approaches to analyze both small- and large-scale data sets generated from transportation systems. Practices of using different data for various real-world traffic/transportation applications and decision making will also be discussed. Prerequisites: Basic probability and statistics (e.g., STAT 330); any programming language such as C, Python or Java is beneficial but not required.

MSIM 480/580, Introduction to Artificial Intelligence. 3 Credits.
Introduction to concepts, principles, challenges, and research in major areas of artificial intelligence. Areas of discussion include: natural language and vision processing, machine learning, machine logic and reasoning, robotics, expert and mundane systems. Laboratory work required. Prerequisite: Instructor approval.

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 literary 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.
MSL 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.**
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. Prerequisite: MSL 101+ or MSL 195.

**MSL 102+. Introduction to Leadership. 1 Credit.**
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. Prerequisite: departmental approval.

**MSL 195. Independent Study of Selected Military Topics. 1 Credit.**
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. Prerequisite: departmental approval.

**MSL 196. Independent Study of Selected Military Topics. 1 Credit.**
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. Prerequisite: departmental approval.

**MSL 201+. Leadership Skills II. 1 Credit.**
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. Prerequisite: MSL 101+/MSL 195/MSL 196, or departmental approval.

**MSL 202+. Foundations of the Military Profession. 1 Credit.**
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. Prerequisite: MSL 201+ or MSL 295, or departmental approval.

**MSL 250+. Alternate Summer Training Program: Leaders Training Course (LTC). 6 Credits.**
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). Prerequisite: departmental approval.

**MSL 251+. Optional Summer Training Program: Airborne School. 2 Credits.**
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. Prerequisite: departmental approval.

**MSL 252+. Optional Summer Training Program: Air Assault School. 2 Credits.**
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. Prerequisite: departmental approval.

**MSL 255. Independent Study of Selected Military Topics. 1 Credit.**
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. Prerequisite: departmental approval.

**MSL 295. Independent Study of Selected Military Topics. 1 Credit.**
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. Prerequisite: departmental approval.

**MSL 301. Advanced Leadership Skills. 3 Credits.**
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. Prerequisites: MSL 201+/MSL 295/MSL 296, or MSL 250+ or departmental approval.

**MSL 302. Applied Leadership. 3 Credits.**
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. Prerequisite: MSL 301 or MSL 395.
MSL 311+. Advanced Leadership Skills III Lab. 1 Credit.
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. Prerequisite: departmental approval. Corequisite: MSL 301.

MSL 312+. Applied Leadership Lab. 1 Credit.
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. Prerequisite: departmental approval.

MSL 315+. Summer Training Program - Leader Development and Assessment Course (LDAC). 6 Credits.
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 at the small unit level under varying, challenging conditions. The 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. Prerequisites: MSL 301/MSL 302 or MSL 395/MSL 396.

MSL 317+. Cadet Troop Leadership Training. 3 Credits.
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. Prerequisite: departmental approval.

MSL 395. Independent Study. 3 Credits.
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. Prerequisite: departmental approval.

MSL 396. Independent Study. 3 Credits.
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. Prerequisite: departmental approval.

MSL 401. Military Leadership and Management. 3 Credits.
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. Prerequisites: MSL 301/MSL 302, MSL 395/MSL 396, or departmental approval.

MSL 402. Officership. 3 Credits.
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. Prerequisite: MSL 401 or departmental approval.

MSL 411+. Senior Military Leadership and Management Laboratory. 1 Credit.
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. Prerequisite: departmental approval.

MSL 412+. Senior Leadership Laboratory. 1 Credit.
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. Prerequisite: departmental approval.

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 239 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 430. Hour Lesson - Applied Composition. 2 Credits.
Hour lesson in composition for minors and non-majors. Prerequisites: MUSA 240 and permission of faculty.

MUSA 431. Hour Lesson. 2 Credits.
One hour lesson per week. Prerequisites: permission of faculty.

MUSA 432. 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 351. 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 352.

MUSA 342. Hour Lesson - Applied Composition. 3 Credits.
One hour composition lesson. Original composition in larger forms. Prerequisites: MUSA 431.

MUSA 349. 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 designed for music majors 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. Prerequisite: Music major or permission of the instructor.

MUSC 113. 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. Sound Recording Technology majors must earn a grade of C or better to progress to MUSC 115. Prerequisite: Bachelor of Music, with emphasis in Sound Recording Technology major, or permission of the instructor.

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 basics of digital audio theory, system configuration, file structure and organization, recording and editing audio and MIDI data as well as post-production video. This course is for Bachelor of Music with emphasis in Sound Recording Technology majors only. Prerequisite: MUSC 113.

MUSC 116. Essentials of Pro Tools. 3 Credits.
Expanding on the skills learned in MUSC 115, this course focuses on the core concepts and skills required to successfully operate Pro Tools systems. Students will explore various I/O setups, controller options, session management techniques, recording and editing approaches as well as the Structure sampler. This course is for Bachelor of Music with emphasis in Sound Recording Technology majors only. Prerequisites: MUSC 115.

MUSC 117. 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 130. Functional Piano Skills. 1 Credit.
Practical training and development of piano skills needed in the elementary, secondary choral, and private vocal studio setting. Focus will be placed on preparing for the piano barrier exam for music education majors (including technical skills, rehearsal skills, and sight reading). (For Music Education vocal/guitar/keyboard majors only.) Pre- or corequisite: MUSC 101, MUSC 102, or permission of instructor.

MUSC 215. ProTools Production. 3 Credits.
Students will investigate production and post-production audio techniques: Various workflows, tracking and overdubbing techniques, film scoring, professional editing techniques as well as advanced automation and mixing processes. Prerequisites: MUSC 116; Bachelor of Music with Emphasis in Sound Recording Technology majors only.

MUSC 216. Music Production Techniques. 3 Credits.
This is the final course in a four-part sequence and prepares the student to successfully operate ProTools HD systems in a large console format 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 215; Bachelor of Music with Emphasis in Sound Recording Technology majors only.

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: Music majors or music minors and completion of Music Theory 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, music minor, 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. Corequisite: MUSC 221.

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, music major, music minor, or permission of instructor.

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. Prerequisites: Music major, music minor, or permission of instructor.

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. Prerequisites: Music major, music minor, or permission of instructor.

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 295. Topics. 1-3 Credits.
Special topics. Prerequisites: Permission of instructor.

MUSC 300. Foundations of Music Education. 3 Credits.
This course will introduce the historical, philosophical, and sociological foundations and contemporary issues of American public education. Also included is an introduction to music education methods and learning theories as they relate to PreK-12 music education, the study of the Virginia Standards of Learning, the National Core Arts Standards for Music and an investigation into teaching for musical understanding, designing musical problems, lesson planning and assessment. In addition, the course will include reading and writing assignments and discussion with teachers and young musicians. All students will complete a 30-hour observation experience in an appropriate PreK-12 setting specific to music education. In order to receive the required school observation placement, students must complete the ODU Teacher Education background check/clearance process prior to the beginning of this course and register for the observation placement on the Teacher Education web pages. See the advisor for more information. Students are expected independently to register for and take the Praxis Core examination or equivalent while enrolled in this course. Prerequisites: Music majors only and sophomore standing.

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 F horn. (offered fall semesters) Prerequisites: students must display the ability to read music; open to music education majors only or with permission of the instructor.

MUSC 302. Music Education: Low Brass Class. 1 Credit.
Required of all instrumental music education students. Designed to develop basic skills of playing and teaching trombone, euphonium, and tuba. (offered fall semesters) Prerequisites: MUSC 301; open to music education majors only or with permission of the instructor.

MUSC 303. Music Education: Clarinet Class. 1 Credit.
Required of all instrumental music education students. Designed to develop basic skills of playing and teaching the clarinet, which serves as a foundation for the other woodwind instruments. (offered fall semesters) Prerequisites: open to music education majors only or with permission of the instructor.

MUSC 304. Music Education: Woodwind Class. 1 Credit.
Required of all instrumental music education students. Designed to develop basic skills of playing and teaching flute, oboe, bassoon, and saxophone. (offered spring semesters) Prerequisites: MUSC 303; open to music education majors only or with permission of the instructor.

MUSC 305. Music Education: Upper Strings Class. 1 Credit.
Required of all instrumental music education students. Designed to develop basic skills of playing and teaching the violin and viola and to explore instructional materials used with these instruments. (offered fall semesters) Prerequisites: Open to music education majors only or with permission of the instructor.

MUSC 306. Music Education: Lower Strings Class. 1 Credit.
Required of all instrumental music education students. 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 semesters) Prerequisites: MUSC 305; open to music education majors only or with permission of the instructor.

MUSC 307. Music Education: Percussion Class I. 1 Credit.
Required of all instrumental music education students. Class lessons on all percussion instruments and the study of teaching methods for these instruments. (offered spring semesters) Prerequisites: Open to music education majors only or with permission of the instructor.

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 310. Music Education: Percussion Class II. 1 Credit. Required of all instrumental music education students. Class lessons on all percussion instruments and the study of teaching methods for these instruments. (Offered fall semesters) Prerequisites: MUSC 307; open to music education majors only or with permission of the instructor.

MUSC 311+. Recital Attendance. 0 Credits. This course is required of all music majors and music minors for six semesters of their enrollment as a music major or a music minor. The successful completion of the course requires attendance at a specified number of approved recitals, concerts, and events each semester. Prerequisites: Music major, music minor or permission of 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, completion of music theory placement test, or permission of instructor.

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. 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.

MUSC 333. Music Business. 3 Credits. An in-depth survey of the music business including an overview of the music industry, songwriting, publishing and copyright, licensing, recording contracts, unions and guilds, artist management, record and concert production, the recording industry, music in broadcast, film, and theater, digital technology and its implications for the music industry including digital downloads, changing production technologies, marketing via social networking and new distribution channels, new business models and their implications, the independent musician, the evolving role of producers, and satellite and internet radio. Students will gain a broad base of knowledge about the music industry and through the research project be able to explore an item of interest in greater depth. Prerequisite: Bachelor of Music with Emphasis in Sound Recording Technology majors only, or permission of the instructor.

MUSC 335T. Music Technology Survey. 3 Credits. This introductory course will explore the impact of technology on music performance, composition, and education through in-class lecture, hands-on demonstration, and lab projects. Topics covered include but are not limited to: basic acoustics, basic audio signal flow for live performance and recording, microphone basics for live performance and recording, an introduction to sequencing and recording software and Digital Audio Workstations, MIDI and synthesis, basics of mixing, editing, an introduction to music notation software and uses, creation of "music minus one" projects for pedagogical purposes, and an exploration of common file formats for distribution and publication. Prerequisite: Music major or permission of the instructor; Sound Recording Technology majors must earn a grade of C or better to progress to MUSC 113.

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. Prerequisite: Music major or permission of the 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) Prerequisites: vocal music major, vocal music minor, 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 352. Critical Listening in Audio Production. 3 Credits. Students develop critical listening skills through aural analysis, ear training, drill and practice, and comparative analyses. Topics covered include spectral balance and equalization, spatial attributes and reverberation, dynamic range control, distortion and noise, audio clip edit points, analysis of sound, frequencies, effects and processing, delays and decays, and meter frequencies. Students are expected to identify frequency ranges, specific audio signatures, distortion, edits, and digit manipulation through aural examinations. Prerequisite: MUSC 113.

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. 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 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. One or three rehearsal periods per week, depending on the ensemble. Students will participate in rehearsals and public performances. Prerequisites: by audition only, or permission of instructor; must have a significant background in performing.

MUSC 372+. Ensemble. 1 Credit. Studio class ensemble for strings. Meets once a week. Prerequisites: By audition only, or permission of instructor; must have a significant background in performing.
MUSC 376+. F. Ludwig Diehn Chorale. 0 Credits.
This is a performance-based course. It is designed to train music majors and non-majors in small ensemble choral techniques. This choral ensemble is an audition-only group. Prerequisites: Audition or permission of instructor.

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 chair 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 chair 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.
Participation in rehearsals and public performances of the band. Three rehearsal periods per week. Prerequisite: ability to read music and/or permission of the instructor.

MUSC 383+. Symphony Orchestra. 1 Credit.
Participation in rehearsals and public performances of the University Symphony Orchestra. Rehearsals two days per week and dress rehearsals TBA. Prerequisites: by audition or permission of the instructor.

MUSC 384+. Jazz Orchestra. 1 Credit.
This instrumental group will explore and perform standard jazz literature for the Jazz Ensemble and the contemporary Jazz Orchestra. Prerequisite: Audition for the instructor required at the beginning of each semester.

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+. Jazz Choir. 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: MUSC 300. Pre- or corequisite: MUSC 402.

MUSC 402. Music Education: Practicum (Elementary Vocal and General). 1 Credit.
Required prior to the Teacher Candidate Internship (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. Also, in order to receive the required school practicum placement, students must have completed the ODU Teacher Education background check/clearance process prior to the beginning of this course. The clearance process takes eight weeks. Students must register for the practicum placement on the Teacher Education web pages prior to the course drop/add deadline. Students should contact their advisor for more information. (offered fall semesters) Prerequisites: MUSC 300 (or TLED 301 completed prior to fall 2015); admission to the Teacher Education program, including meeting minimum Virginia Board of Education testing requirements and minimum GPA of 2.75 overall, in the Music Education major, and Professional Education courses required. Pre- or corequisite: MUSC 401.

MUSC 403. Music Education: Secondary Vocal Methods. 2 Credits.
Required prior to the Teacher Candidate Internship (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) Prerequisite: MUSC 300 (or TLED 301 completed prior to fall 2015); or TLED 290. Pre- or corequisite: MUSC 404.

Old Dominion University
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 Subject assessment, music content knowledge examination (formerly Praxis II) and passing scores on the VCLA are requirements of this course. Also, in order to receive the required school practicum placement, students must have completed the ODU Teacher Education background check/clearance process prior to the beginning of this course. The clearance process takes eight weeks. Students must register for the practicum placement on the Teacher Education web pages prior to the course drop/add deadline. Students should contact their advisor for more information. (offered spring semesters). Prerequisites: MUSC 300 or TLED 301 completed prior to fall 2015; admission to the Teacher Education program, including meeting minimum Virginia Board of Education testing requirements and minimum GPA of 2.75 overall, in the Music Education major, and Professional Education courses required. Pre- or corequisite: MUSC 403.

Music Education: Secondary Instrumental Methods. 2 Credits.
Required prior to the Teacher Candidate Internship (student teaching) for all students in music education with an instrumental music concentration. Focuses on methods of instruction, materials and rehearsal methods for secondary instrumental classrooms. (offered spring semesters) Prerequisites: MUSC 300. Pre- or corequisite: MUSC 408.

Music Education: Practicum (Secondary Instrumental). 1 Credit.
Required prior to the Teacher Candidate Internship (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 Subject assessment, music content knowledge examination (formerly Praxis II) and passing scores on the VCLA are requirements of this course (offered spring semesters). Also, in order to receive the required school practicum placement, students must have completed the ODU Teacher Education background check/clearance process prior to the beginning of this course. The clearance process takes eight weeks. Students must register for the practicum placement on the Teacher Education web pages prior to the course drop/add deadline. Students should contact their advisor for more information. Prerequisites: MUSC 300 or TLED 301 completed prior to fall 2015; admission to the Teacher Education program, including meeting minimum Virginia Board of Education testing requirements and minimum GPA of 2.75 overall, in the Music Education major, and Professional Education courses required. Pre- or corequisite: MUSC 407.

Music Education: Instrumental Techniques. 1 Credit.
Required prior to the Teacher Candidate Internship (student teaching) for all students in music education with the 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: vocal music education majors or permission of the instructor.

Music Education: Advanced Choral Conducting. 2 Credits.
Course deals with the analysis, interpretation, and conducting of varied choral literature. Prerequisites: MUSC 309 or permission of instructor.

Music Education: Advanced Instrumental Conducting. 2 Credits.
Course deals with the analysis, interpretation, and conducting of varied instrumental literature. Prerequisites: MUSC 309 or permission of instructor.

Music Education: 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 or permission of instructor.

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.

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.

Music Production: 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.

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.

Musicians' Health: Music and Medicine. 3 Credits.
This course is designed to assist music students to enhance 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.

Music Production: MIDI I. 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 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. (This course is offered in fall semesters in odd-numbered 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.
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 102. Naval Sea Power. 3 Credits.
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 111+. Naval Laboratory I. 1 Credit.
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. Prerequisite: departmental permission.

NAVS 112+. Naval Laboratory I. 1 Credit.
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. Prerequisite: departmental permission.

NAVS 201. Naval Ships Systems I. 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.
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.
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. Prerequisite: departmental permission.

NAVS 212+. Naval Laboratory II. 1 Credit.
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. Prerequisite: departmental permission.

NAVS 301. Navigation and Naval Operations I. 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. Prerequisite: departmental permission.

NAVS 302. Navigation and Naval Operations II. 3 Credits.
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. Prerequisite: departmental permission.

NAVS 310. Evolution of Warfare. 3 Credits.
Explores the basic concepts for understanding the operational art of warfare from the beginning of recorded history to the present. Prerequisite: departmental permission.

NAVS 311+. Naval Laboratory III. 1 Credit.
Military formations, drill movements, commands, customs, courtesies, honors and inspections. Lecture/discussion topics include cruise preparation and evaluation, safety, administration, security, equal opportunity and military justice. Third year Naval Science students only. Prerequisite: departmental permission.

NAVS 312+. Naval Laboratory III. 1 Credit.
Military formations, drill movements, commands, customs, courtesies, honors and inspections. Lecture/discussion topics include cruise preparation and evaluation, safety, administration, security, equal opportunity and military justice. Third year Naval Science students only. Prerequisite: departmental permission.

NAVS 395. Topics. 3 Credits.
Study of selected topics. Prerequisite: departmental permission.

NAVS 401. Leadership and Management I. 3 Credits.
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. Prerequisite: NROTC Junior or Senior Midshipman or STA-21/MECEP; departmental permission required for non-ROTC students.

NAVS 402. Leadership and Ethics. 3 Credits.
Capstone course, designed to equip the student with the critical thinking skills to address moral and ethical dilemmas frequently faced by naval officers. Prerequisite: completion of all previous NAVS courses.

NAVS 410. Fundamentals of Maneuver Warfare. 3 Credits.
Broad aspects of warfare and their interactions with maneuver warfare doctrine. Focus on the United States Marine Corps as the premier maneuver warfare fighting institution. Historical influences on current tactical, operational, and strategic implications of maneuver warfare practices. Case studies. Enrollment preference to NROTC students. Prerequisites: departmental permission.

NAVS 411+. Naval Laboratory IV. 1 Credit.
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. Prerequisite: departmental permission.
NAVY 412+. Naval Laboratory IV. 1 Credit.
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. Prerequisite: departmental permission.

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 240 or BIOL 250 and BIOL 241 or BIOL 251 and admission to the nuclear medicine program.

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 or 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. Prerequisites: admission to the program and permission of the program director.

NMED 440. 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. 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. 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 304. Principles of Practice: Foundations of Health Assessment. 3 Credits.
This didactic and laboratory course emphasizes the assessment phase of the nursing process. Supervised practice, faculty demonstration, and self-paced learning in the audio-visual laboratory, simulation laboratory and selected clinical sites facilitate skill acquisition in health assessment and health history interviewing. Prerequisites: Admission to the BSN program. Pre- or corequisites: NURS 316 and NURS 317.

NURS 305. Health Assessment. 3 Credits.
This course emphasizes the physical assessment phase of the nursing process. For registered nurse students only. Prerequisites: Admission to the BSN 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 BSN program. Pre- or corequisite: NURS 401.

NURS 310. Principles of Practice: Introduction to Nutrition/Normal Nutrition. 1 Credit.
This course focuses on concepts of normal nutrition. Emphasis is placed on understanding the impact of various nutrients on the body. Prerequisites: Admission to the BSN program.

NURS 311. Principles of Practice: Nutrition of Nursing Practice. 1 Credit.
This course builds upon NURS 310 and introduces the student to selected therapeutic diets. Emphasis is placed on specific diets associated with selected alterations in adaptation and the adult with behavioral issues. Prerequisite: NURS 310.

NURS 314. Principles of Practice: Foundational Concepts. 3 Credits.
Emphasis is on concepts and theories that are fundamental to professional nursing practice, the nursing process, and therapeutic nurse-patient communication. Prerequisites: Admission to the BSN program.
NURS 316. Principles of Practice: Foundations of Practice. 3 Credits.
This course focuses on concepts and theories underlying professional clinical nursing practice. This course also includes laboratory application of health assessment skills, the nursing process, and clinical nursing techniques. Prerequisites: Admission to the BSN program. Pre- or corequisite: NURS 304.

NURS 317. Principles of Practice: Clinical Foundations of Practice. 1 Credit.
This clinical course focuses on the assessment and basic care of the hospitalized adult client. Application of the nursing process, health assessment, and clinical nursing techniques are implemented using concepts and theories that underlie professional nursing practice. Prerequisite: admission to the BSN program. Pre- or corequisite: NURS 304 and NURS 316.

NURS 322. Health Continuum: Adult Health I. 4 Credits.
This lecture course focuses on the adult who is experiencing selected alterations and/or adaptations in organ system function such as elimination, immune system/cellular regulation, hematological system, fluid balance, temperature regulation and nutritional balances. Focus is also on the adult experiencing pain, inflammation and other selected system alterations. Emphasis is on the use of the nursing process to assist adult patients to adapt to alterations/adaptations in function of systems. Prerequisites: NURS 304, NURS 316 and NURS 317. Pre- or corequisite: NURS 323 and NURS 373.

NURS 323. Health Continuum: Clinical Management Adult Health 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 will be actualized in generalized medical surgical units and oncology units. Prerequisites: NURS 304, NURS 316, and NURS 317. Pre- or corequisite: NURS 322 and NURS 373.

NURS 332. Health Continuum: The Growing Family. 2 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, psychological and physiological changes that occur in this stage of family and personal development. The assistive role of the nurse and as a family-centered provider of care is a major focus. Prerequisites: NURS 322 and NURS 323. Pre- or corequisite: NURS 333.

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. Basic principals of palliative care are provided. Students are expected to demonstrate responsibility and accountability for personal actions as well as a respect for families and clients. Prerequisites: NURS 322 and NURS 323. Pre- or corequisite: NURS 332.

NURS 352. Health Continuum: Behavioral Issues, Altered Cognition and Coping. 2 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. Prerequisites: NURS 304, NURS 316 and NURS 317. Pre- or corequisite: NURS 353.

NURS 353. Clinical Management of Patients with Behavioral Issues, Altered Cognition and Coping. 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. Prerequisites: NURS 304, NURS 316 and NURS 317. Pre- or corequisite: NURS 352.

NURS 355. Genetics in Nursing. 2 Credits.
Emphasis is placed on current information and research findings about the role of genetics in health. Students completing this course will be better prepared to incorporate genetic information and technology when providing care to clients. A student receiving credit for NURS 355 cannot receive credit for NURS 455. Prerequisite: Admission to the prelicensure BSN program.

NURS 356. Global Health Perspectives. 2 Credits.
This introductory course to global health emphasizes the major underlying determinants of poor health and the relationship between health and political, social, and economic development. Students will be introduced to global effects on the health of populations worldwide, current and future challenges to global health and the role of primary health care providers in meeting that challenge. (A student receiving credit for NURS 356 cannot receive credit for NURS 456.) Prerequisite: admission to the prelicensure BSN program.

NURS 357. Palliative Care in Nursing. 2 Credits.
This course provides an overview of the need to improve end of life care and the role of nursing as a member of the interdisciplinary team in providing quality care. Basic principals of palliative care are presented within a quality of life (QOL) framework. Palliative care nursing care combines caring, communication, knowledge, and skill. Clinical issues to include expert assessment skills and aggressive pain and symptom management as well as the psychological, social, and spiritual care of patients and families experiencing a life threatening progressive illness will be discussed. Caring for the dying means not only "doing for" but also "being with". Students will be provided the opportunity to use introspection to clarify their own feelings related to the dying process. A student receiving credit for NURS 357 cannot receive credit for NURS 457. Prerequisite: Admission to the prelicensure BSN program.

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. Prerequisites: Admission to BSN program.

NURS 363. Principles of Practice: Research as Foundation for Practice. 3 Credits.
This course focuses on the theories and concepts utilized in the scientific investigation of nursing practice. Content emphasizes the development of research skills necessary to be a consumer of nursing research. Prerequisites: Admission to BSN program. Pre- or corequisites: 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. Prerequisites: admission to BSN program and permission of undergraduate program director or chief departmental advisor.

NURS 373. Principles of Practice: Pharmacology for Nursing Practice I. 2 Credits.
This course is designed to involve the student in the application of the nursing process to clinical situations involving drug therapy. Prerequisites: NURS 304, NURS 316 and NURS 317. Pre- or corequisites: NURS 322 and NURS 323.

NURS 376. Principles of Practice: Pharmacology Across the Continuum. 1 Credit.
This course is designed to involve nursing students in the practical application of the nursing process in clinical pharmacotherapeutics related to selected concepts. Prerequisites: NURS 373.

This is an advanced placement course for nursing students concurrently enrolled in level 1 nursing coursework with an approved partner nursing program. After successful completion of the didactic coursework and clinical requirements at the partner institution, the student will be awarded experiential learning credits.

NURS 381. Clinical Nursing Concepts 2. 9 Credits.
This is an advanced placement course for nursing students concurrently enrolled in level 2 nursing coursework with an approved partner nursing program. After successful completion of the didactic coursework and clinical requirements at the partner institution, the student will be awarded experiential learning credits.
NURS 382. Clinical Nursing Concepts 3, 9 Credits.
This is an advanced placement course for nursing students concurrently enrolled in level 3 nursing coursework with an approved partner nursing program. After successful completion of the didactic coursework and clinical requirements at the partner institution, the student will be awarded experiential learning credits.

NURS 383. Clinical Nursing Concepts 4, 9 Credits.
This is an advanced placement course for nursing students concurrently enrolled in level 4 nursing coursework with an approved partner nursing program. After successful completion of the didactic coursework and clinical requirements at the partner institution, the student will be awarded experiential learning credits. Proof of licensure as a registered nurse is required prior to awarding the level 4 experiential learning credits.

NURS 387. Principles of Practice: Research as Foundation for Practice. 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. Open to Honors Program students only. Prerequisites: Admission to the BSN program. Pre- or corequisites: STAT 130M.

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. Course descriptions and prerequisites are available from the chief academic advisor. Prerequisites: 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. Introduction to Professional Development for Baccalaureate Nursing Practice. 4 Credits.
This course focuses on basic skills required for success in the post-licensure baccalaureate nursing program. Emphasis is placed on professional development for baccalaureate nursing practice. Selected skills to be acquired include introduction to the development of a professional portfolio, APA professional writing format, information literacy in nursing literature and professional communication strategies. For registered nurse students only. Prerequisite: Admission to the BSN program.

NURS 402. Role Development for the Baccalaureate Nurse as Educator. 3 Credits.
This course focuses on further development of the 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: NURS 401.

NURS 403. Transition to Baccalaureate Nursing Practice. 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. NURS 403 may only be taken in the final semester of the nursing curriculum. Prerequisite: NURS 402. Pre- or corequisites: NURS 305, NURS 306, NURS 363, NURS 401, NURS 412, NURS 417, NURS 490W, and NURS 492.

NURS 410. Health Continuum: Adult Health II. 4 Credits.
This lecture course focuses on the adult experiencing multisystem alterations/adaptations. Emphasis is on the use of the nursing process to assist adult clients to adapt to multisystem alterations/adaptations related to illness. Prerequisites: NURS 322 and NURS 323. Pre- or corequisite: NURS 453 and NURS 474.

NURS 412. Ethics, Law, Economics & Health Policy: Application to Quality Nursing Practice. 3 Credits.
This course examines ethics, law, economics and health policy that influence nursing practice, the health care system, and quality patient care. Prerequisite: Admission to the BSN program.

NURS 417. Nursing Informatics. 1 Credit.
This course focuses on information management and the utilization of patient care technologies to improve the patient experience of care (quality, satisfaction, safety), improve the health of populations, and reduce cost. Students will develop knowledge, skills and attitudes related to nursing informatics through readings, online discussions, case studies and exploration and use of electronic modalities. Prerequisites: Admission to the BSN program.

NURS 421. Health Continuum: Clinical Management of Children of the Family. 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. Prerequisites: NURS 322 and NURS 323. Pre- or corequisite: NURS 422.

NURS 422. Health Continuum: Children of the Family. 2 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 illnesses. 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 health care settings. Prerequisites: NURS 322 and NURS 323. Pre- or corequisite: NURS 421.

NURS 430. Principles of Practice: Contemporary Issues in Nursing Care of the Older Adult. 2 Credits.
This course focuses on the nursing needs of the well gerontological client. Emphasis is on the multi-complex needs of the older adult. Prerequisites: Admission to the BSN program.

NURS 440. Health Continuum Recovery. 2 Credits.
This course introduces the theoretical and applied concepts necessary to assist individuals with potential or actual disabilities prevent further functional dependence or restore maximum levels of function. Prerequisites: NURS 322, NURS 323, and NURS 373. Pre- or corequisite: NURS 441.

NURS 441. Health Continuum: Clinical Management of Recovery. 2 Credits.
This clinical course focuses on using the nursing process to assist the recovery of individuals with disabilities prevent further functional dependence or restore maximum levels of function. Collaborative team approaches are stressed. Prerequisites: NURS 322, NURS 323 and NURS 373. Pre- or corequisite: NURS 440.
NURS 453. Health Continuum: Clinical Management Adult Health Nursing II. 2 Credits.
This clinical course emphasizes the provision of nursing care to clients who are experiencing alterations/adaptations in organ system functions. Through the use of the nursing process, students will provide and coordinate care and serve as client advocates in a variety of settings. Prerequisites: NURS 322 and NURS 323. Pre- or corequisite: NURS 410 and NURS 474.

NURS 454. Critical Care Nursing. 2 Credits.
This elective clinical and didactic course is designed for final semester pre-licensure students who are requesting adult critical care (CC) or emergency department (ED) Role Transition preceptorship placement. Prerequisites: NURS 410 and NURS 453 and permission of the instructor.

NURS 455. Genetics in Nursing. 3 Credits.
Emphasis is placed on current information & research findings about the role of genetics in health. Students completing this course will be better prepared to incorporate genetic information and technology when providing care to clients. A student receiving credit for NURS 455 cannot receive credit for NURS 455. Prerequisite: Admission to the postlicensure BSN program.

NURS 456. Global Health Perspectives. 3 Credits.
This introductory course to global health emphasizes the major underlying determinants of poor health and the relationship between health and political, social, and economic development. Students will be introduced to global effects on the health of populations worldwide, current and future challenges to global health and the role of primary health care providers in meeting that challenge. A student receiving credit for NURS 456 cannot receive credit for NURS 356. Prerequisite: permission of the instructor.

NURS 457. Palliative Care. 3 Credits.
This course provides an overview of the need to improve end of life care and the role of nursing as a member of the interdisciplinary team in providing quality care. Basic principles of palliative care are presented within a quality of life (QOL) framework. Palliative care nursing care combines caring, communication, knowledge, and skill. Clinical issues to include expert assessment skills and aggressive pain and symptom management as well as the psychological, social, and spiritual care of patients and families experiencing a life threatening progressive illness will be discussed. Caring for the dying means not only "doing for" but also "being with". Students will be provided the opportunity to use introspection to clarify their own feelings related to the dying process. A student receiving credit for NURS 457 cannot receive credit for NURS 457. Prerequisite: Admission to the postlicensure BSN program.

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 462. Nursing in the Health Care System Community I. 1 Credit.
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. Prerequisites: NURS 322 and NURS 323. Pre- or corequisite: NURS 463.

NURS 463. Nursing in the Health Care System: Community Interactions I. 1 Credit.
This clinical course provides opportunity for application of concepts and themes of families and communities through experience and interactions with health care coalition groups. Prerequisites: NURS 322 and NURS 323. Pre- or corequisite: NURS 462.

NURS 472. Nursing in the Health Care System: Community II. 1 Credit.
This course focuses on the continued development of concepts related to family and community health nursing. Content emphasizes development of strategies to facilitate application of concepts and themes of families and communities. The nursing process is used to assist in promoting and maintaining health. Prerequisites: NURS 462 and NURS 463. Pre- or corequisite: NURS 473.

NURS 473. Nursing in the Health Care System: Community Interactions II. 1 Credit.
Application of course concepts through experience and interactions with healthcare coalition groups are emphasized. Prerequisites: NURS 462 and NURS 463. Pre- or corequisite: NURS 472.

NURS 474. Principles of Practice: Pharmacology for Nursing Practice II. 2 Credits.
This course is designed to involve nursing students in the practical application of the nursing process in clinical pharmacotherapeutics related to selected concepts. Prerequisites: NURS 376. Pre- or corequisite: NURS 410 and NURS 453.

NURS 480W. Nursing in the Health Care System: 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, professional image and case management on nursing practice is examined. This is a writing intensive course. Prerequisites: Completion of ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better.

NURS 481. Principles of Practice: Role Transition. 5 Credits.
This capstone course is a practicum experience in which students apply theoretical, conceptual and psychomotor learning in a structured clinical environment under the supervision of a staff preceptor. The experience is designed to assist the student to facilitate the transition to the role of the baccalaureate generalist nurse. Prerequisites: NURS 317, NURS 323, NURS 333, NURS 353, NURS 421, NURS 441, and NURS 453. Pre- or corequisite: Senior standing in the curriculum.

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. This is a writing intensive course. Prerequisites: Admission to the BSN program and completion of ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better. Pre- or corequisite: NURS 401.

NURS 491. Principles of Practice: Role Transition. 5 Credits.
This capstone course is a practicum experience in which students apply theoretical, conceptual and psychomotor learning in a structured clinical environment under the supervision of a staff preceptor. The experience is designed to assist the student to facilitate the transition to the role of the baccalaureate generalist nurse. Prerequisites: NURS 317, NURS 323, NURS 333, NURS 353, NURS 421, NURS 441, and NURS 453. Pre- or corequisite: Senior standing in the program.

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 BSN program. Pre- or corequisite: NURS 401.

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.
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.

NURS 499. Clinical Nursing Concepts III. 33 Credits.
This is an advanced placement course for registered nurse students. After verification of registered nurse licensure, the student will be awarded 33 experiential learning credits.
OEAS - Ocean, Earth and Atmospheric Sciences

OCEAN, EARTH AND ATMOSPHERIC SCIENCES Courses

OEAS 106N, Introductory Oceanography. 4 Credits.
Introductory course emphasizing the geology, chemistry, physics and biology of the oceans. 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.
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 130G. Research Skills and Information Literacy for the Natural Sciences. 3 Credits.
This course is designed to introduce students to a range of research and information literacy skills necessary for natural scientists. The course will introduce students to the wide range of research being undertaken in the natural sciences (e.g., oceanography, geology, physics, biology, and chemistry). The course involves directed reading, exercises in information retrieval, and the synthesis of information from a range of sources into scientific essays and oral presentations.

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 220T, Introduction to Meteorology. 3 Credits.
This course is an introduction to the basic principles governing both day-to-day weather and the average of weather, or climate. Specific focus will be given to the tools used to measure weather and the ways in which these tools have impacted our understanding of weather in the past and present. Links will be made between the technology-based improvements of our understanding of weather and the impact on the lives of humans throughout recent history. Students will learn about how weather forecasts are made, and how the quality of these forecasts affects our lives.

OEAS 250N. Natural Hazards and Disasters. 4 Credits.
This course introduces the science behind some of Earth’s natural phenomena that can, and often do, result in major loss of life or catastrophic damage to property. It includes an overview, with relevant case studies, of earthquakes, tsunamis, landslides, volcanic eruptions, tropical cyclones, hurricanes, tornadoes, floods, droughts, and space weather. The impact of global climate change and sea level rise on vulnerable populations is examined and current risk assessment and mitigation practices are discussed.

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.
Geologic resources and processes that limit human activities and pose significant hazards. Does not satisfy OEAS major degree requirements. Prerequisites: junior standing and an 8-hour sequence in a General Education science course.

OEAS 303. Paleontology. 3 Credits.
This course introduces the concepts of paleontology, focusing on the relationship between the evolution of life (particularly invertebrates) and the development of Earth. Field work will also include studies in paleoecology and sedimentary facies. Two field trips are recommended. Prerequisite: OEAS 111N.

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 or MATH 205, BIOL 121N or BIOL 136N and BIOL 122N or BIOL 137N, CHEM 121N-CHEM 122N, OEAS 111N, and PHYS 111N or PHYS 231N.

OEAS 307. Oceanography Laboratory. 1 Credit.
Laboratory experiments designed to complement topics presented in the companion lecture course, OEAS 306. Students taking OEAS 306 are strongly encouraged to take this laboratory class concurrently with OEAS 306. Ocean and Earth Science majors are required to take this class. Prerequisites: BIOL 122N or BIOL 137N, BIOL 124N, CHEM 122N, CHEM 124N, and OEAS 111N, all with a grade of C or better. Pre- or corequisite: OEAS 306 with a grade of C or better.

OEAS 310. Global Earth Systems. 4 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 121N or BIOL 136N, BIOL 122N or BIOL 137N, CHEM 121N, CHEM 122N, MATH 211, and OEAS 111N, all with a grade of C or better.

OEAS 315. Minerals and Rocks. 4 Credits.
The course introduces the main igneous, sedimentary and metamorphic rocks and their mineral composition. Laboratory exercises include mineral identification by physical and microscopic optical properties, the identification of rocks in hand samples, and basic training with the Brunton compass. Field work includes training in introductory facies analysis, and the analysis of sedimentary rock structures, unconformities, volcanic, plutonic, and metamorphic rock units, clastics and carbonates. Prerequisites: OEAS 111N, CHEM 121N, and CHEM 122N.

OEAS 320. Sedimentology and Stratigraphy. 4 Credits.
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. Prerequisites: OEAS 110N or OEAS 111N.

OEAS 344W, Geomorphology. 3 Credits.
Geologic processes that shape the earth's surface. Laboratory studies involve interpretation of topographic maps, soil maps, and aerial photographs. Field trip required. This is a writing intensive course. Prerequisites: OEAS 112N, OEAS 320 AND either ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better; or permission of instructor.
OEAS 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 Career Management program prior to the semester in which the experience is to take place. Prerequisites: junior standing and permission of the department.

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.

OEAS 369. Practicum. 1-3 Credits.
Field experience in ocean, earth and atmospheric sciences. (qualifies as a CAP experience) Prerequisite: junior standing, permission of department and must have declared ocean and earth sciences major or minor.

OEAS 395. Special Topics. 1-4 Credits.
Lectures, field and laboratory studies. An investigation of a selected problem in physical, geological, chemical, or biological oceanography. Prerequisite: permission of the instructor.

OEAS 402/502. Field Experiences in Oceanography for Teachers. 3 Credits.
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. Prerequisite: background in K-12 Education.

OEAS 403W/503. Aquatic Pollution. 3 Credits.
This course will present basic ecological principles relevant to water pollution and ecotoxicology. Topics will include runoff, eutrophication, water and 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, ENGL 221C, or ENGL 231C. Pre- or corequisites: a grade of C or better in OEAS 306.

OEAS 404/504. Environmental Physiology of Marine Animals. 3 Credits.
Functional morphology and physiological aspects of growth and ecological energetics of marine animals. Basic concepts and habitat comparisons. Prerequisite: junior standing; upper level biology courses.

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 410/510. Chemical Oceanography. 3 Credits.
Chemical composition of the ocean and the chemical, biological, geological and physical processes controlling it. Prerequisites: CHEM 121N-CHEM 122N and CHEM 123N-CHEM 124N, OEAS 306 or consent of instructor.

OEAS 411/511. Structural Geology. 4 Credits.
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. Prerequisite: OEAS 320 or permission of instructor.

OEAS 412/512. Global Environmental Change. 3 Credits.
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. Prerequisites: OEAS 306 and OEAS 310.

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 111N.

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. 3 Credits.
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. Prerequisites: PHYS 232N or 112N, OEAS 306, OEAS 310, STAT 310 or STAT 330.

OEAS 418/518. Chemical Limnology. 3 Credits.
Chemical cycling in lakes and reservoirs, and interactions with biological and physical processes; quantitative modeling of lake geochemistry. Prerequisite: OEAS 306.

OEAS 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/GEOG 504.

OEAS 420/520. Hydrogeology. 3 Credits.
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. Prerequisites: OEAS 320, MATH 211, PHYS 111N-PHYS 112N or PHYS 231N-PHYS 232N, or permission of the instructor.

OEAS 426/526. Concepts in Oceanography for Teachers. 3 Credits.
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. Prerequisite: junior standing or permission of the instructor.

OEAS 430/530. Introduction to Geophysics. 3 Credits.
Introduction to the physics of the earth, including plate tectonics, volcanism, earthquakes and seismology, the Earth's magnetic field, geophysical remote sensing, and mantle convection. Prerequisites: OEAS 111N, MATH 211, and PHYS 111N-PHYS 112N or PHYS 231N-PHYS 232N.

OEAS 431/531. Sedimentary Petrology. 3 Credits.
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. Prerequisite: OEAS 320.

OEAS 434/534. Geodynamics. 3 Credits.
A qualitative and quantitative description of physical processes in the Earth and environmental sciences. Topics include stress and strain, plate elasticity and flexure, heat flow, fluid mechanics, material rheology, and groundwater flow. Emphasis will be placed on developing an understanding of Earth dynamics using real-world examples, including numerical exercises. Corequisite: PHYS 232N. Prerequisites: OEAS 111N, MATH 211, MATH 212, and PHYS 231N.

OEAS 435. Introduction to Ocean Modeling and Prediction. 3 Credits.
Introduction to concepts and theories of numerical ocean circulation models and their applications in physical oceanography, computational fluid dynamics, environmental problems and ocean forecast systems. Prerequisites: OEAS 405 or OEAS 306; permission of instructor or CEE 330.
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. Prerequisites: OEAS 106N, OEAS 126N or OEAS 306 and STAT 130M or STAT 310.

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 development of research questions and site selection, field sampling, sample analyses and interpretation. Oral presentations of results will be made by each student. Prerequisites: OEAS 306 and OEAS 310; CHEM 123N and CHEM 124N, BIOL 121N or OEAS 303; PHYS 112N or PHYS 232N; MATH 212; STAT 310; all prerequisite courses must be passed with a grade of C or better.

OEAS 442W. Ocean and Earth Sciences Field Study II. 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. This is a writing intensive course. Prerequisites: a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; OEAS 441.

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 or 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.
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. Prerequisite: OEAS 344W.

OEAS 448/548. Population Ecology. 3 Credits.
This course uses conceptual and mathematical models to understand how populations grow and persist in space and time. Both plants and animals are discussed. Prerequisite: MATH 211.

OEAS 451/551. Data Collection and Analysis in Oceanography. 4 Credits.
This course introduces students to the basic oceanographic instruments used to obtain and analyze information by investigating 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, MATH 211, MATH 212 and STAT 310.

OEAS 452. Microbial Ecology of the Oceans. 4 Credits.
This course studies the role that microbes play in biogeochemical cycling and food web dynamics in the oceans (the microbial loop). The course will include lectures, group discussions of primary literature, and laboratory experiments. Laboratory exercises will include traditional microbial ecology and molecular ecology. Students will learn skills useful to oceanography field work. Prerequisite: OEAS 306 or permission of the instructor.

OEAS 453W/553. Marine Molecular Ecology. 4 Credits.
This course will explore the ecology of marine organisms using molecular techniques and data. Molecular ecology covers a wide variety of sub-disciplines, including genetics, physiology, ecology, and evolution. The course will explore basic theory in population genetics, ecology, and evolution and cover nucleic acid techniques and their applications. This is a writing intensive course. Prerequisite: BIOL 291 or BIOL 292 or BIOL 293 or BIOL 303 or BIOL 331 or OEAS 306.

OEAS 466W/566. Introduction to Mitigation and Adaptation Studies. 3 Credits.
Students will be introduced to the science underpinning mitigation of human-induced changes in the Earth system, including but not limited to climate change and sea level rise, and adaptation to the impacts of these changes. The course will cover the environmental hazards and the opportunities and limitations for conservation, mitigation and adaptation. This is a writing intensive course. Cross listed with BIOL 466W and IDS 466W. Prerequisite: BIOL 291 or permission of instructor.

OEAS 467/567. Sustainability Leadership. 3 Credits.
In this class, students will discover what makes a leader for sustainability. They will consider a range of global and local crises from a leadership point of view in the context of sustainability science, which addresses the development of communities in a rapidly changing social, economic, and environmental system-of-systems environment. The course will be based on taking a problem-motivated and solution-focused approach to the challenges considered. The course includes a service learning project focusing on a leadership experience in solving a real-world environmental problem. Prerequisite: BIOL 466W or OEAS 466W or IDS 466W.

OEAS 468W. 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. This is a writing intensive course. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C and OEAS 306 or OEAS 310 and STEM 201.

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 490. Paleooceanography. 3 Credits.
This course will provide an overview of how marine sediments are used to reconstruct Earth's climate history over the past 600 million years. Students will discuss the factors that control modern climate and explore how these variables led to cycles of greenhouse and icehouse worlds in the past. Finally, students will discuss how past and modern climate records can be used to predict future climate change. Prerequisites: general chemistry, CHEM 111N and OEAS 112N.

OEAS 495/595. Special Topics. 1-4 Credits.
Lectures, field and laboratory studies. An investigation of a selected problem in physical, geological, chemical, or biological oceanography. Prerequisites: junior standing and permission of the instructor.

OEAS 497. Special Problems and Research. 1-3 Credits.
Independent reading and study on a topic to be selected with the direction of an instructor. Prerequisite: junior standing.
OPMT - Operations Management

OPERATIONS MANAGEMENT Courses

OPMT 303. Operations Management. 3 Credits.
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. Prerequisites: BNAL 206 or STAT 130M; AND a declared major in the University or an intended major in the Strome College of Business or permission of the Dean's Office of the Strome College; AND Junior Standing.

OPMT 367. Cooperative Education. 1-3 Credits.
Approval for enrollment and allowable credits is determined by the department and Career Development Services in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience) Prerequisites: junior standing and a declared major in the university or permission of the Dean's Office.

OPMT 368. Student Internship. 1-3 Credits.
Approval for enrollment and allowable credits is determined by the department and Career Development Services in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience) Prerequisites: junior standing and a declared major in the university or permission of the Dean's Office.

OPMT 369. Practicum. 1-3 Credits.
Approval for enrollment and allowable credits are determined by the department CAP adviser and the Career Development Services in the semester prior to enrollment. Student participation in a professional work experience. Available for pass/fail grading only. (qualifies as a CAP experience) Prerequisites: OPMT 303 and a declared major in the university or permission of the Dean's Office.

OPMT 455. SAP Applications. 3 Credits.
This course introduces students to the concept of enterprise resource planning. Students will learn SAP (Systems, Applications and Products in Data Processing) enterprise software to manage business operations and customer relations by analyzing and presenting data stats in an engaging way, and producing meaningful and insightful business solutions. Prerequisite: OPMT 303, or IT 201, or IT 360T, or instructor's permission.

OPMT 495. Selected Topics in Operations Management. 3 Credits.
Selected advanced topics in operations management. 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.

OPMT 497. Independent Study in Operations Management. 1-3 Credits.
Affords students the opportunity to undertake independent study under the direction of a faculty member. Prerequisite: permission of the department.

PAS - Public Affairs and Service

PUBLIC AFFAIRS AND SERVICE Courses

PAS 300. Foundations of Public Service. 3 Credits.
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. Prerequisites: A declared major in the University or permission of the Dean's Office of the College of Business.

PAS 301. Ethics, Governance and Accountability in Public Service. 3 Credits.
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. Prerequisites: A declared major in the University or permission of the Dean's Office of the College of Business.

PAS 368. Internship in Public Service. 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 Development Services in the semester prior to enrollment.

PAS 395. Selected Topics in Public Administration. 3 Credits.
Designed for the study of selected topics in public administration. Prerequisites: A declared major in the University or permission of the Dean's Office of the College of Business.

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 College of Business 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 College of Business Dean's Office.

PAS 410. Public and Non-profit Organization. 3 Credits.
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. 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 College of Business.

PAS 411. Multi-Sector Partnerships for Public Service. 3 Credits.
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. 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 College of Business.

PAS 412. Public Service Practice. 3 Credits.
This course is designed to provide an overview of the essential elements of learning and serving. The course will focus on how to provide meaningful service to a community agency or organization while simultaneously gaining new skills, knowledge, and understanding as an integrated aspect of the student's academic program. Prerequisite: PAS 300.

PAS 413. Public Service Entrepreneurship. 3 Credits.
Public service entrepreneurship supports the development of socially aware and responsive students through service and learning. Students will participate in service projects with community partners to recognize and reflect on the social needs of their community. This course will integrate classroom learning with community participation to provide practical experience for students to recognize the rewards of serving. Prerequisite: PAS 300.

PAS 497. Independent Study in Public Service. 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 112+. Yoga. 1-2 Credits.
The 1-credit option of this course focuses on yoga postures and breathing exercises. The 2-credit option 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 117+. Accessible Fitness and Wellness. 1-2 Credits.
Designed for students who self-identify as having social, cognitive, emotional, psychological, or physical limitations who would benefit from a small group and/or individualized fitness/nutritional training program. Students will learn the basic principles about cardiovascular/aerobic training and resistance/weight training to increase flexibility, balance and overall fitness. Upon completion, students should be able to plan and implement a personal, lifelong fitness program based on their individual needs, abilities, goals and interests. Course will also include classes on nutrition to increase overall wellness.

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 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 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. 1-2 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 176+. Pilates. 1 Credit.
Students will understand the basic principles of Pilates and will be able to demonstrate the ability of performing beginning and intermediate Pilates exercises with correct form and technique.

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 provides comprehensive information on the philosophical and aesthetic aspects of Aikido.

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 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 Aikido, 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.
PHI 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.

PHI 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.

PHI 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.

PHI 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.

PHI 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.

PHI 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: Junior standing and three semester hours in philosophy, or permission of the instructor.

PHI 340. Logic. 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.

PHI 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: ENGL 110C.

PHI 345E. Bioethics. 3 Credits.
An examination of the philosophical foundations of ethical decision making in biology, medicine, and the life sciences. Prerequisites: ENGL 110C.
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 355E. Cybersecurity Ethics. 3 Credits.
This course examines ethical issues relevant to computing and information technology, including: privacy; freedom of speech and content control on the Internet; individual and social responsibility; cybersecurity; cybercrimes; social impact of computers and other digital technologies; and ethical obligations of IT professionals. Students will gain a broad understanding of central issues in cyberethics and the ways that fundamental ethical theories relate to these core issues. Prerequisites: ENGL 110C.

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. 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 400. Philosophy and Video Games. 3 Credits.
An examination of the metaphysical, aesthetic, and ethical philosophical issues that accompany the creation, play, and critique of video games. Students will learn and analyze theories about what games are. They will think about and discuss the aesthetic qualities of video games and critically engage with attempts to fit video games into the larger art world. Students will engage with moral issues that arise from creating and consuming video games with morally problematic content. Finally, students will learn how to think critically about and interpret larger philosophical problems raised by video games and their themes. Prerequisites: Junior standing and a grade of C or better in PHIL 110P or ENMA 480, or instructor permission.

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 three semester hours in philosophy, or permission of the instructor.

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 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 Neo-Confucianism. 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 of the Solar System. 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 of Galaxies and Cosmology. 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.
An introductory laboratory course in astronomy dealing with experiments about the laws of nature that apply to objects in our solar system. Prerequisite: written permission of the chief departmental advisor of the Physics Department.

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.
Available for pass/fail grading only. An introductory laboratory covering experiments from mechanics, wave motion, heat and sound. Prerequisites: written permission of the chief departmental advisor of the Physics Department.

PHYS 114. Physics Laboratory. 1 Credit.
Available for pass/fail grading only. An introductory laboratory covering experiments from electricity, magnetism, and optics. Prerequisites: written permission of the chief departmental advisor of the Physics Department.

PHYS 120. Physics in the 21st Century. 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.
Open only to students in the Honors College. A special honors version of PHYS 103N.

PHYS 127N. Honors: Introductory Astronomy. 4 Credits.
Open only to students in the Honors College. A special honors version of PHYS 104N.

PHYS 226N. Honors: University Physics I. 4 Credits.
Open only to students in the Honors College. A special honors version of PHYS 231N. This course also includes a Recitation Section for more in-depth discussion of advanced problems. Prerequisites: MATH 211 with a grade of C or better. Pre- or corequisite: MATH 212.

PHYS 227N. Honors: University Physics II. 4 Credits.
Open only to students in the Honors College. A special honors version of PHYS 232N, including a recitation section for discussion of advanced problems. Prerequisites: PHYS 231N or PHYS 226N or PHYS 261N with a grade of C or better, and both MATH 211 and MATH 212 each with a grade of C or better.

Old Dominion University
PHYS 231N. University Physics I. 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 or PHYS 261N with a grade of C or better, and both MATH 211 and MATH 212 with each a grade of C or better.

PHYS 261N. Advanced University Physics I. 4 Credits.
This calculus-based course is the required introductory course for Physics majors. In addition to the physics curriculum of PHYS 231N, this course has a recitation section for advanced problems and additional mathematical preparation for advanced courses in physics. Prerequisites: MATH 211, with a grade of C or better. Pre- or corequisite: MATH 212.

PHYS 262N. Advanced University Physics II. 4 Credits.
This calculus-based course is the required introductory course for Physics majors. In addition to the physics curriculum of PHYS 232N, this course has a recitation section for advanced problems and additional mathematical preparation for advanced courses in physics. Prerequisites: PHYS 261N with a grade of C or better; MATH 211 and MATH 212, each with a grade of C or better.

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 or PHYS 227N or PHYS 262N.

PHYS 309. Physics on the Back of an Envelope. 1 Credit.
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. Prerequisites: PHYS 102N or PHYS 112N or PHYS 232N or PHYS 227N or PHYS 262N.

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 102N (or MATH 103N).

PHYS 313. Elements of Astrophysics. 3 Credits.
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. Prerequisites: PHYS 232N or PHYS 227N or PHYS 262N.

PHYS 319. Analytical Mechanics. 3 Credits.
Fundamentals of Newtonian mechanics. Topics include kinematics, dynamics, energy and momentum, central forces and planetary motion, and resonance phenomena. (Offered Spring) Prerequisites: PHYS 232N or PHYS 227N or PHYS 262N. Pre- or corequisite: MATH 307 or MATH 280.

PHYS 323. Modern Physics. 3 Credits.
Introduction to the wave nature of matter, with applications in materials science, atomic, and nuclear physics. Introduction to relativivity, including applications in mechanics and electrodynamics. (Offered Fall) Prerequisites: PHYS 232N or PHYS 227N or PHYS 262N and MATH 212.

PHYS 350. Light and Lasers. 3 Credits.
An analysis of those concepts of geometrical optical 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 eximer lasers. Laser applications in medicine, communications, information processing, holography, pollution detection, and material testing and fabrication are stressed. Prerequisite: PHYS 102N or PHYS 112N or PHYS 232N.

PHYS 355. Mathematical Methods of Physics. 3 Credits.
This course will provide a strong foundation in the mathematical methods and applications necessary for undergraduate study of physics beyond the introductory level. The course contains a mandatory recitation section. (Offered Fall) Prerequisites: PHYS 232N or PHYS 227N or PHYS 262N and MATH 212. Pre- or corequisite: MATH 312 or MATH 285.

PHYS 367. Cooperative Education. 1-3 Credits.
May be repeated for credit. 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 Development Services prior to the semester in which the work experience is to take place. Prerequisites: approval of the chief departmental advisor and Career Development Services in accordance with the policy for granting credit for Cooperative Education programs.

PHYS 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. Prerequisites: approval by the chief departmental advisor and Career Development Services.

PHYS 406/506. Observational Astronomy. 3 Credits.
Observational techniques in astronomy with emphasis on constellation identification, celestial movements, and telescopic observation. Individualized night observations are required. Prerequisite: junior standing.

PHYS 408/508. Astronomy for Teachers. 3 Credits.
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. Prerequisite: junior standing.

PHYS 411. Introduction to Atomic Physics. 3 Credits.
The hydrogen atom, radiative transitions, two-electron systems, many-electron atoms, interaction with external fields, theory of atomic spectra. Prerequisites: PHYS 452 and MATH 307.

PHYS 413/513. Methods of Experimental Physics. 3 Credits.
Experiments in classical and modern physics, designed to develop skills in the collection, analysis, and interpretation of experimental data. (Offered Spring) Prerequisites: PHYS 303 or ECE 287, and PHYS 323. Pre- or corequisite: CS 150.

PHYS 415/515. Introduction to Nuclear and Particle Physics. 3 Credits.
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. Prerequisite: PHYS 452. Pre- or corequisite: MATH 307.
Physics 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.

Physics 417/517: Introduction to Particle Accelerator Physics. 3 Credits.
Fundamentals of relativistic particle dynamics including particle acceleration; weak and strong focusing; linear beam optics and particle transfer matrices; linear and non-linear synchrotron motion; introduction to the statistical descriptions of particle beams; and radiation production by accelerated relativistic particles. Examples relevant to betatrons, cyclotrons, synchrotrons, and linear accelerators will be given. Prerequisites: PHYS 319 or MAE 205, and PHYS 425 or ECE 323.

Physics 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.

Physics 425/525: Electromagnetism I. 3 Credits.
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. The course contains a mandatory recitation section. Pre- or corequisite: PHYS 355. Prerequisites: PHYS 232N or PHYS 227N or PHYS 262N and MATH 312.

Physics 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.

Physics 452/552: Introduction to Quantum Mechanics. 3 Credits.
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. The course contains a mandatory recitation section. Prerequisites: PHYS 319, PHYS 323, and PHYS 355.

Physics 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. The course contains a mandatory recitation section. Prerequisites: PHYS 425 or ECE 323 and MATH 312.

Physics 454/554: Thermal and Statistical Physics. 3 Credits.
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. Prerequisites: PHYS 425 and MATH 323.

Physics 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. The course contains a mandatory recitation section. Prerequisites: PHYS 323 and PHYS 452 or permission of the instructor.

Physics 460: Fundamentals of Accelerator Physics and Technology with Simulations and Measurements Lab. 3 Credits.
Explores the historical development of accelerators and their past and present applications. Principles of acceleration, including the physics of linear accelerators, synchrotrons, and storage rings. Magnet design; machine lattice design and particle beam optics. Longitudinal and transverse beam dynamics, including synchrotron and betatron particle motion. Special topics will be reviewed, including synchrotron radiation, injection techniques, and collective effects and beam instabilities. Prerequisites: PHYS 319 and PHYS 425.

Physics 467. Preparing for the Physics GRE. 1 Credit.
This course will review the style and scope of problems likely to be found on the Physics Graduate Record Exam (GRE). Emphasis is on quick solving of problems based on foundational knowledge and intuition. This course is particularly intended for students preparing to apply for graduate school, but may be of interest to all students. Prerequisites: PHYS 323 and PHYS 319.

Physics 468W: Research Methods in Mathematics 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 scientific results. Students will perform four independent inquiries, combining skills from mathematics and science to solve research problems. Required for Physics teaching licensure track; not available as upper-division elective in content area. This is a writing intensive course. Prerequisites: Admission to the Monarch Teach Program; PHYS 232N or MATH 212; and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

Physics 489W: Senior Thesis I. 1 Credit.
Part one of a two-semester option for completing the Senior Thesis. This is a writing intensive course. PHYS 489W plus PHYS 490W is equivalent to PHYS 499W. Prerequisites: permission of the instructor and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

Physics 490W: Senior Thesis II. 2 Credits.
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. Prerequisites: PHYS 489W.

Physics 495/595: Special Topics in Physics. 1-3 Credits.
In-depth study of a selected topic in physics at the advanced undergraduate level. May include a laboratory or computational component. Prerequisite: permission of the instructor.

Physics 497/597: Special Problems and Research. 1-3 Credits.
These courses afford the student an opportunity to pursue individual study and research. Prerequisite: senior standing or permission of the instructor.

Physics 499W: Senior Thesis. 3 Credits.
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. This is a writing intensive course. (offered fall, spring, summer) Prerequisites: grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C and permission of the instructor.

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 POLS 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.
Part Two 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. 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.

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. This is a writing intensive course. Prerequisites: 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 Development Services prior to the semester in which the work experience is to take place. Prerequisites: Approval of the department chair and Career Development Services.

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. 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 425W. Cybersecurity Strategy and Policy. 3 Credits.
This writing intensive course explores cybersecurity policy and strategy and introduces students to the essentials of strategy development and policy making in cybersecurity. Topics considered include planning principles in cyber strategy; risk management and cybersecurity policy; the connections between cybersecurity policies, businesses, and governmental institutions; the knowledge, skills, and abilities needed to develop and implement cybersecurity policy; the social, political and ethical implications that arise in cybersecurity policies and strategies; strategies to assess cybersecurity policy; and the ties between national security and cybersecurity policy. Prerequisites: ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better and CYSE 200T or POLS 101S.

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. 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 102S 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. 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 458T. 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.
Introduction to the four skills (listening, speaking, reading, writing) of elementary Portuguese.

PRTG 102F. Beginning Portuguese II. 3 Credits.
This course will build and expand on the linguistic proficiency in the four skills areas (listening, speaking, reading, writing) of elementary Portuguese. Prerequisites: PRTG 101F or permission of the instructor.

PRTG 295. Topics in Portuguese. 1-3 Credits.
A study of selected topics for elective credit. These courses will appear in the course schedule.

PRTS – Parks, Recreation and Tourism Studies

PARK, 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 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 212. 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. Pre- or corequisite: PRTS 211.

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 Park, 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 - Lecture. 3 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. This course includes the examination of theories of youth development, behavioral management, motivation, and social skills as they relate to the recreation experience. Prerequisite: PRTS 212.

PRTS 303. Youth Development through Recreation - Lab. 1 Credit.
This course has a mandatory service-learning component that takes place in a Norfolk after-school program. Students will be at a school one day a week for 10 weeks, and will meet once a week in lab (ODU campus) to develop and practice leading activities designed to instill resiliency in youths. Prerequisite: PRTS 212.

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 SMGT 366) 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. 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 Credits.
Selected field-based experiences in a park, recreation and tourism service setting. Minimum of 200 clock hours. Prerequisites: junior standing.

PRTS 405. Outdoor Recreation. 3 Credits.
This course is designed to increase knowledge, skills, techniques, policies and procedures related to outdoor recreation. Students are required to participate in outdoor recreation experiences through the Outdoor Adventure Program and on their own. Additional weekends and fees will be required for professional certifications (e.g., Professional Climbers Instructors’ Association). 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 outdoors as a classroom will be explored. Students are required to participate in outdoor recreation experiences through the Outdoor Adventure Program and on their own. Additional weekends and fees will be required for professional certifications (e.g., Wilderness First Aid). Prerequisites: junior standing or permission of the instructor.

PRTS 410. Evidence-Based Programming and Practice in Therapeutic Recreation. 3 Credits.
This course is designed to provide students with a practical understanding of client-centered therapeutic recreation program design and evidence-based practice. Emphasis will be placed on the role and purpose of therapeutic recreation service delivery within health care and community settings. Topics will include assessment, program planning, activity analysis, implementation of evidence-based interventions, documentation, and evaluation of services as well as interprofessional practice. Prerequisites: junior standing or permission of instructor; PRTS 261 with a grade of C- or better.

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 261 with a grade of C- or better.

PRTS 425. Financial Management in Recreation. 3 Credits.
The course examines the principles and practices of financial management in park, recreation, and tourism. It prepares students for programming and administrative tasks by understanding terminology, budget formats and being able to prepare and manage program budgets. The budget process, various budget formats, economic and accounting terminology and reporting will be reviewed. Students will learn about revenue sources including fees and charges, sponsorship, taxes, grants, fundraising and long term financing. Prerequisite: 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 with a grade of C- or better; junior standing or permission of instructor.

PRTS 433. Camp Administration. 3 Credits.
This course will cover organization and administration of camp programs and facilities including history, trends, staffing, client needs, finance, marketing, accreditation, research and legal issues. Primary emphasis will be on organized camp programs and their impact on youth and society. Prerequisites: 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. Disability Culture in Therapeutic Recreation. 3 Credits.
This course will emphasize how disability is defined and understood on both a micro and macro level as related to the field of therapeutic recreation. The symptomatology of various disabilities will be explored and correlated with specific therapeutic recreation strategies and techniques for treatment. In addition, explanatory models of disability will be covered, including an exploration of the ethical issues associated with various ways disability has been understood and represented over time. Prerequisites: junior standing or permission of instructor; PRTS 261 with a grade of C- or better.

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 261 with a grade of C- or better.

PRTS 461. Tourism and the Hospitality Industry. 3 Credits.
This course explores tourism from a social perspective. The focus of this 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. Sustainable Tourism Management. 3 Credits.
This course examines the principles and practices of planning, marketing, and managing sustainable tourism. Assessment, development, and maintenance of sustainable tourism products are explored. Prerequisites: Junior standing or permission of the instructor.

PRTS 482W. Applied Research in Park, Recreation & Tourism - Lecture. 3 Credits.
The purpose of this course is to give students basic knowledge in research and evaluation within the contexts of park, 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 and junior standing.

PRTS 483W. Applied Research in Park, Recreation & Tourism - Lab. 1 Credit.
The purpose of this course is to give students basic knowledge in professional writing and statistics within the contexts of park, recreation and tourism studies. Specific focus is placed on learning APA Style basics, statistical analysis using SPSS, and writing a professional report. Topics include APA technical writing skills development, database analyses, and researching a topic. This is a writing intensive course. Prerequisite: junior standing.

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. 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 300. Careers in Psychology. 3 Credits.**
Discussion of available careers in psychology with a bachelor's degree, job-search skills, and required job search materials. Open to declared psychology majors only. Prerequisites: Junior standing and completion of PSYC 201S with a grade of C (2.0) or higher.

**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 307. Institutionalization of Human-Centered Computing. 3 Credits.**
This course introduces students to the fundamental principles of human-computer interaction. Emphasis is placed on leadership knowledge needed to implement human-centered design practices into an organization's culture. Prerequisite: PSYC 201S.

**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 316. Scientific Reasoning in Psychology. 3 Credits.**
An introduction to critically thinking about psychological principles with an emphasis on quantitative and research methodology. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher and MATH 102M or higher with a grade of C (2.0) or higher.

**PSYC 317. Quantitative Methods. 4 Credits.**
The application of inferential statistical principles to psychological research problems. Prerequisites: Completion of PSYC 201S, PSYC 316, and MATH 102M all with a grade of C (2.0) or higher.

**PSYC 318W. Research Methods in Psychology. 4 Credits.**
An examination of research principles and techniques in psychology. Experimental design and interpretation is stressed. Students learn to locate and read technical articles and to report on research projects in the style of the American Psychological Association. This is a writing intensive course. Prerequisites: Completion of ENGL 211C or ENGL 221C or ENGL 231C and PSYC 316 and 317 with a grade of C (2.0) or higher.

**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: PSYC 201S.

**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 201S with a grade of C (2.0) or higher.

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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 Career Development Services 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. Prerequisites: Completion of PSYC 317 with a grade of C (2.0) or higher and permission of the instructor. 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 Development Services 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. Prerequisites: Completion of PSYC 317 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. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher and junior standing or permission of the 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.

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 494. Entrepreneurship in Psychology, 3 Credits.
The entrepreneurship is a course designed to help students enhance their personal and professional development through innovation guided by faculty members and professionals. It offers students an opportunity to integrate disciplinary theory and knowledge through developing a nonprofit program, product, business, or other initiative. The real-world experiences that entrepreneurship provide will help students understand how academic knowledge leads to transformations, innovations, and solutions to different types of problems. Prerequisite: Junior standing.

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.

PUBH 301. Principles of 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. Cross-listed with ENVH 301. Prerequisite: A grade of C or better in ENGL 110C.

PUBH 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. Cross-listed with CHP 318. Prerequisites: CHEM 105N-CHEM 106N or CHEM 121N-CHEM 122N and CHEM 123N-CHEM 124N; BIOL 240, BIOL 241, BIOL 250 or BIOL 251. a declared major in the University or approval of the program director.

PUBH 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. Cross-listed with CHP 328. Prerequisites: A declared major in the University or approval of the program director.

PUBH 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. Cross-listed with CHP 335. Prerequisites: A declared major in the University or approval of the program director.

PUBH 360. Introduction to Global Health, 3 Credits.
This course introduces students to health-care delivery systems of non-Western countries, specifically developing countries. The various factors that influence health-care planning and delivery of health services are addressed. Cross-listed with CHP 360. Prerequisites: A declared major in the University or approval of the program director.

PUBH 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. Cross-listed with CHP 390. Prerequisites: A declared major in the University or approval of the program director.

PUBH 395. Topics in Public Health, 3 Credits.
Study of selected topics. Prerequisite: A declared major in the University or approval of the program director.

PUBH 400. Ethics in Public Health, 3 Credits.
A survey of philosophical problems common to health sciences, including an analysis of the nature of health in its historical and contemporary contexts. Cross-listed with CHP 400. Prerequisites: A declared major in the University or approval of the program director.

PUBH 403W. Social and Behavioral Aspects of Public Health, 3 Credits.
The course will emphasize the importance of social context and cultural construction, social and behavioral foundations of public health and examine current issues in health from a social and behavioral sciences perspective. The course uses a social ecological framework to address multilevel influences on health and enlarge the dominant “risk factor” approach to health behavior. This is a writing intensive course. Prerequisites: ENGL 110C and ENGL 211C with a C or better, CHP 328, CHP 335, and CHP 390.

PUBH 413W. Public Health Education, 3 Credits.
Identifies and analyzes the major public health issues and their historical and contemporary context. Cross-listed with CHP 413W. Prerequisites: A declared major in the University or approval of the program director.
PUBH 415. One Health-One Medicine. 3 Credits.
This course will teach students the applications of multidisciplinary competencies towards solving human health challenges. The course will identify all areas of global health issues that require human, veterinary and environmental applications for solutions. Prerequisites: junior standing and a declared major in the University or approval of the program director.

PUBH 421. Leadership in Public Health. 3 Credits.
The course will introduce students to the main theories of leadership in public health covering key concepts and strategies using the six levels of leadership framework. The course will explore how individual, team, organizational, community, professional and global leadership impact population and public health. Prerequisites: CHP 328, CHP 335 and CHP 390.

PUBH 422. Health, Culture and Diversity-Reducing Disparities in Public Health. 3 Credits.
The course will introduce students to the main theories of culture, health and diversity and examines what is meant by culture, the ways in which culture intersects with health issues, how public health efforts can benefit by understanding and working with cultural processes, and a brief selection of conceptual tools and research methods that are useful in identifying relationships between culture and health. The course will also include practical guidelines for incorporating cultural understanding in public health settings and examples of programs where that has occurred. Prerequisites: junior standing and a declared major in the University or approval of the program director.

PUBH 425. Health Aspects of Aging. 3 Credits.
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. Prerequisites: PUBH 328, PUBH 335, and PUBH 390.

PUBH 430W. Community Health Resources and Health Promotion. 3 Credits.
Designed to provide information about community health resources. This is a writing intensive course. Cross-listed with CHP 430W. Prerequisites: ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better and a declared major in the University or approval of the program director.

PUBH 441/541. Multi-Disciplinary Approaches to Suicide Prevention. 3 Credits.
Using readings from health sciences, public health, law and psychology, the course addresses multi-level influences on suicide and its prevention. Topics covered include suicide prevention-related ethical issues, terminology, attitudes and social norms, vulnerable populations, risk/protective factors, and public health approaches to prevention. Prerequisite: Junior standing.

PUBH 445. Health Services Research Methods. 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 the understanding and control of population health and disease with emphasis on environmental applications. Cross-listed with ENVH 448. Prerequisites: STAT 130M, MATH 162M, and a declared major in the University or approval of the program director.

PUBH 448. 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. Cross-listed with ENVH 448. Prerequisites: STAT 130M, MATH 162M, and a declared major in the University or approval of the program director.

PUBH 450. Public and Community Health Administration. 3 Credits.
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. PUBH 400, PUBH 413W or PUBH 430W, and PUBH 450 meet the oral communication requirement in the major. All three courses must be taken to meet the requirement. Cross-listed with CHP 450. Prerequisites: A declared major in the University or approval of the program director.

PUBH 461. 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. Cross-listed with CHP 461. Prerequisites: PUBH 328, PUBH 335, PUBH 390, and a declared major in the University or approval of the program director.

PUBH 475. Healthcare Marketing. 3 Credits.
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. Cross-listed with CHP 475. Prerequisite: a declared major in the University or approval of the program director.

PUBH 485. Public Health Informatics. 3 Credits.
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. Cross-listed with CHP 485. Prerequisite: junior standing and a declared major in the University or approval of the program director.

PUBH 495. Topics in Public Health. 3 Credits.
This course provides the opportunity for the study of selected topics in public/community health, including informatics, under the supervision of a faculty member. Prerequisites: A declared major in the University or approval of the program director.

REL - Religious Studies

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 333. Historical Jesus. 3 Credits.
This course examines the several quests to uncover the historical reality behind Jesus of Nazareth in modern biblical-historical scholarship, including the work of scholars like Albert Schweitzer, Rudolph Bultmann, and the many contemporary inquirers. Students are expected to have some familiarity with the New Testament and/or early Christianity. Prerequisites: Junior standing and three semester hours in REL or PHIL.

REL 350. Judaism. 3 Credits.
This course is a basic introduction to Judaism. We will explore the fundamental tenets of Jewish belief, examine primary expressions of Jewish ritual and practice, discuss the historical development of Judaism, and explore sacred texts, secular Yiddish texts, and contemporary issues confronting Jews and Judaism. Prerequisites: ENGL 110C.
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 the College of Sciences. 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.
Topics of study that are not offered regularly.

SCI 302T. The Evolution of Modern Science. 3 Credits.
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). Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, or HIST 105H.

SCI 395. Special Topics. 1-3 Credits.
Topics of study that are not offered regularly. Prerequisites: permission of the instructor.

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.
Topics that are not offered regularly. Prerequisites: permission of the instructor.
SEPS - STEM Education and Professional Studies

STEM EDUCATION AND PROFESSIONAL STUDIES Courses

SEPS 100. Sales Techniques. 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.

SEPS 102. Advertising and Promotion. 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.

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.
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.
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.
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. Prerequisites: sophomore standing.

SEPS 302. Workforce Supervision. 3 Credits.
Explores the skills and knowledge required of successful supervisors: leading, motivating, setting goals, delegating, budgeting, interviewing, negotiating, counseling, coaching, conducting meetings, and handling grievances. Prerequisite: junior standing or permission of the instructor.

SEPS 303. Social Aspects of Clothing. 3 Credits.
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. Prerequisite: SEPS 220 or SEPS 208 and junior standing or permission of instructor.

SEPS 355. Fashion Consumer Behavior. 3 Credits.
This course is designed to enhance a student's understanding of what drives customers' wants and needs for fashion merchandise. Students examine the forces that affect consumer buying behavior and how they relate to the marketing of fashion. Prerequisites: SEPS 208 and SEPS 220.

SEPS 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. Prerequisite: approval by the department in accordance with the policy for granting credit for Cooperative Education programs.

SEPS 389. Education and Training of Adults. 3 Credits.
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. Prerequisite: junior standing or permission of the instructor.

SEPS 395. Topics in Occupational Education. 1-3 Credits.
The department offers selected topics designed to permit small groups of qualified students to work on subjects of mutual interest. Prerequisite: permission of the instructor.

SEPS 400/500. Instructional Systems Development. 3 Credits.
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. Prerequisite: junior standing.

SEPS 401/501. Foundations of Career and Technical Education. 3 Credits.
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. Prerequisite: junior standing.

SEPS 402/502. Instructional Methods in Occupational Studies. 3 Credits.
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. Prerequisite: SEPS 400.

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. Prerequisites: junior standing.

SEPS 408/508. Advanced Classroom Issues and Practices in Career and Technical Education. 3 Credits.
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. Prerequisite: admission to an approved teacher education program.

SEPS 409/509. Fashion Forecasting Market Trip. 3 Credits.
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. Prerequisite: SEPS 208.

SEPS 410/510. The Foreign Fashion Market Trip. 3 Credits.
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. Prerequisite: SEPS 208.
SEPS 415. Advanced Merchandising. 3 Credits.
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.
Prerequisite: SEPS 208.

SEPS 420. Fashion Research. 3 Credits.
This course is designed to apply diverse research methods to explore the complex dynamics in fashion. Utilizing an interdisciplinary approach, students will engage in diverse topics in fashion bridging the gap between theory and practice.
Prerequisites: SEPS 208 and SEPS 220.

SEPS 422. Fashion Product Development. 3 Credits.
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.
Prerequisites: SEPS 208 and SEPS 220.

SEPS 423/523. Visual Merchandising and Display. 3 Credits.
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.
Prerequisite: junior standing or permission of the instructor.

SEPS 424/524. Fashion, Textiles, and Construction Analysis. 3 Credits.
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.
Prerequisite: junior standing or permission of the instructor.

SEPS 427. Fashion Marketing. 3 Credits.
This course explains key concepts of fashion marketing and illustrates how they are applied within the fashion industry. Using examples and case studies, students will examine how marketers develop and apply strategies that meet consumer needs for fashion products.
Prerequisites: SEPS 208 and SEPS 220.

SEPS 431/531. Web-Based Organization for Fashion. 3 Credits.
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.
Prerequisite: STEM 251G.

SEPS 435/535. International 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. Fashion Global Sourcing/Supply Chain Management. 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.
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.
Prerequisite: junior standing.

SEPS 456. E-Commerce and Social Media in Fashion. 3 Credits.
This course is designed to understand the expanding fields of e-commerce and social media. It will focus on examining features available in social media and the web/mobile technologies and their ability to improve fashion marketing strategies.
Prerequisites: SEPS 208 and SEPS 220.

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. This course should be taken in the final semester before graduation.
Prerequisites: Senior standing.

SEPS 484/584. Student Teaching Mentored. 6-12 Credits.
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.
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.

SEPS 485. Student Teaching. 12 Credits.
Five days per week, full semester. Available for pass/fail grading only.
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.

SEPS 486/586. Middle School Student Teaching for Technical Education. 6 Credits.
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.
Prerequisites: STEM 305, STEM 306, SEPS 408, SPED 313, TLED 408 and SEPS 450; or SEPS 508, SEPS 596, STEM 730, SEPS 788, TLED 608, TLED 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.

SEPS 495/595. Topics in Occupational 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. Prerequisite: permission of the instructor.

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.
Independent study. Prerequisite: permission of the instructor.

SEPS 498. Independent Study in Occupational Education. 1-6 Credits.
Independent study. 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. 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. 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 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 495/595. 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 relation 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 326. LGBTQ People, Crime, and Justice. 3 Credits.
Learning appropriate terminology to discuss LGBTQ individuals, as well as a review of the social issues facing these populations, including damaging cultural stereotypes. Critically exploring the history of interactions between LGBTQ communities and agents of formal control, such as schools and the police, including responses to bullying and bias crimes. Interrogating how changing political and social contexts affect policy regarding formal responses to LGBTQ communities. Prerequisites: SOC 201S or CRJS 215S.

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 343. Sociology of Sexuality. 3 Credits.
An introduction to the sociological study of sexualities. This course focuses on the ways in which sexuality as a social institution and identity intersects with other hierarchies of privilege and inequality, such as race, social class, and gender. A range of topics will be covered including LGBTQ+ identities, the social construction of sexuality, historical accounts of sexual practices, and contemporary theories and research in sexualities studies. 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 347. Sport Sociology. 3 Credits.
This course applies the sociological perspective to the world of sports. It provides the student with a better understanding of the social processes involved in sports. The course looks at how the media, community, tradition, and privilege play an integral role in the participation of sporting events. It also covers why sports exist, who plays sports, and what will become of sports in the future. Prerequisite: SOC 201S OR CRJS 215S.

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 Development Services prior to the semester in which the work experience is to take place. Prerequisites: Approval of the department and Career Development Services.
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. Prerequisites: Permission of the department internship director.

SOC 369. Practicum. 3-6 Credits.
This course is for students participating in the Career Advantage Program. 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 419. Animals and Society. 3 Credits.
This is a class about the role of nonhuman animals in society. Animals are used to entertain, to do work, to provide companionship, to provide food, and more. In this class, we also discuss the causes and consequences of both individual and institutional animal abuse. Society's relation to wildlife is also an important component and includes poaching, sport and trophy hunting, and society's reaction to wolves, coyotes, and wild horses in the West. Cross-listed with CRJS 419. Prerequisites: SOC 201S and CRJS 215S.

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. Sociology of Health and Wellbeing. 3 Credits.
The study of health and wellbeing. After exploring how health is conceptualized by the prevailing allopathic medical model, an emergent alternative or "integrative" health perspective is examined with a focus on how wellbeing may be understood. Prerequisites: SOC 201S 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 445. Workplace Law and Society. 3 Credits.
This course examines the laws of the workplace from a sociological and issue-driven approach considering two perspectives – both employer and employee. Relevant laws are identified, explored and made relevant through examples of their application in real-world situations. Sometimes the wisdom of these laws will be challenged; students will be encouraged to raise questions about a law’s utility, justice or fairness, whether in principle or in application. Prerequisite: Junior standing.

SOC 451. Race, Ethnicity, Crime and Justice. 3 Credits.
This course will examine the intersectionality of race, ethnicity, crime, justice and the operation of the criminal justice system and will critically assess controversial issues surrounding race, ethnicity, crime, and justice. Students will discuss contemporary social justice issues as they relate to race, ethnicity, crime, and justice. The theoretical frameworks that explain the intersection between race, ethnicity, crime and justice will be examined. The course will also investigate the broad range of policy issues and recommendations impacting communities of color and the administration of criminal and social justice. Prerequisite: CRJS 215S or SOC 201S.

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 494. Entrepreneurship in Sociology/Criminal Justice. 3 Credits.
This course is designed to help students enhance their personal and professional development through innovation guided by faculty members and professionals. It offers students an opportunity to integrate disciplinary theory and knowledge through developing a nonprofit program, product, business, or other initiative. The real-world experiences that entrepreneurialships provided will help students understand how academic knowledge leads to transformations, innovations, and solutions to different types of problems. The course can be delivered either as an independent project for individual students or as group projects similar to those sometimes offered in topics courses. Prerequisite: junior standing.

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. Independent Study. 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.
This course is the first of the beginning Spanish language sequence. The course takes a task-based, content-based, communicative approach to language learning and teaching. It develops beginning skills in reading, writing, speaking and listening. The course also builds communicative competence and enhances social and cultural awareness of the Spanish-speaking world.

SPAN 102F. Beginning Spanish II. 3 Credits.
This course is the second of the beginning Spanish language sequence. The course takes a task-based, content-based, communicative approach to language learning and teaching. It develops beginning skills in reading, writing, speaking and listening. The course also builds communicative competence and enhances social and cultural awareness of the Spanish-speaking world. Prerequisites: SPAN 101F.

SPAN 121F. Intensive Beginning Spanish. 6 Credits.
This is a six-credit accelerated introductory-level course designed to provide a thorough foundation in all the language skills: listening, speaking, reading, and writing. Students should expect an average of 1-2 hours of online homework five days a week. Students will learn grammar and vocabulary at home, and class time will be devoted to meaningful, authentic, and interactive practice. Class is conducted in Spanish only. Prerequisites: Students must have taken at least three years of high school Spanish.

SPAN 195. Topics in Spanish. 1-3 Credits.
A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule.

SPAN 196. Topics in Spanish. 1-3 Credits.
A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule.

SPAN 201. Intermediate Spanish I. 3 Credits.
This first course of the intermediate language sequence is designed to improve the speaking, listening, reading, and writing skills of students and to provide insight into the language and culture of Spanish-speaking people. Meant to integrate and extend earlier learning, the course is intended to keep building communicative competence and social and cultural awareness of the Spanish-speaking world. Prerequisites: SPAN 102F or SPAN 121F or advanced placement.

SPAN 202. Intermediate Spanish II. 3 Credits.
This course is a continuation of SPAN 201 that further improves the speaking, listening, reading, and writing skills of students and provides insight into the language and culture of Spanish-speaking people. It is intended to keep building communicative competence and social and cultural awareness of the Spanish-speaking world. Prerequisites: SPAN 201 or advanced placement.

SPAN 221. Intensive Intermediate Spanish. 6 Credits.
This accelerated course continues the focus in SPAN 121F on the study of Hispanic cultures and the development of listening, speaking, reading and writing in Spanish. Prerequisites: A grade of C or better in SPAN 121F or SPAN 102F or have placed into SPAN 201 by examination.

SPAN 266. Spanish for Health Professions. 3 Credits.
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. Prerequisites: SPAN 101F and SPAN 102F or SPAN 121F or 3 years of Spanish at the secondary level.

SPAN 295. Topics in Spanish. 1-3 Credits.
A study of selected topics designed as electives for nonmajors. These courses will appear in the course schedule.

SPAN 296. Topics in Spanish. 1-3 Credits.
A study of selected topics designed as electives for nonmajors. These courses will appear in the course schedule.
SPAN 310. Advanced Grammar Review. 3 Credits.
May be taken concurrently with SPAN 312W. The objective of the course is to improve the student's knowledge of Spanish grammar and syntax through the review of grammatical rules and their application. Emphasis is placed on how grammatical forms codify meaning and how grammar and meaning interact to construct the language and textual structure of different genres. This course is recommended for students who wish to major or minor in Spanish and need a grammar review. As this course is considered a review, it will not count toward the major or minor. Prerequisites: SPAN 202 or SPAN 221 or placement through testing.

SPAN 311. Communicative Competence: Speaking and Listening. 3 Credits.
This course is primarily a conversation course to develop linguistic and cultural proficiency in verbal communication. Task-oriented communication strategies in cross-cultural training will be practiced by presenting students with models that demonstrate appropriate linguistic and cultural competencies. Students will practice these skills by role-playing, giving presentations, enfolding self-awareness with practiced in-group discussions on various topics (such as, prejudice, racism, values, and customs) that dispel stereotypes and foster more in-depth social-cultural understanding, and with participation in guided cultural encounters. Students will improve their listening and comprehension skills and deepen cultural proficiency by learning how to communicate and collaborate with other people and cultures in a global age. (This is an oral skills course.) Prerequisites: a grade of C or better in SPAN 202 or SPAN 221 or advanced placement.

SPAN 312W. Communicative Competence: Writing and Reading. 3 Credits.
This is an intensive writing course designed with writing assignments that examine various cultural contexts that enable students to understand cultural content, style, audience and organization. The main objective of the course is increased awareness of and sensitivity to appropriate word choice, and syntax in the language. Students will engage in writing for different cultural audiences and in varied contexts such as literary, artistic and media expressions around the world. Special emphasis is placed on the methodology of close reading as students hone the analytics skills and vocabulary necessary to interpret idioms, regionalism, cultural expressions and overall intercultural skills observed in various genres and cultures. Students will analyze compelling global issues and the diverse cultural perspectives that inform them. Prerequisite: A grade of C or better in ENGL 211C, ENGL 221C or ENGL 231C and a grade of C or better in SPAN 202 or SPAN 221 or advanced placement.

SPAN 320. Spanish Culture and Civilization. 3 Credits.
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. Prerequisites: SPAN 311 and SPAN 312W with a grade of C or better.

SPAN 321. Latin American Culture and Civilization. 3 Credits.
This course introduces students to social, political, economic, intellectual and artistic manifestations of Latin America culture today, and also provides a day-by-day analysis of contemporary cultures by reading current newspapers, magazines, watching current news broadcasts and tapping into Internet resources. The course will discuss such topics as the arts, ethnic heritage and diversity, urban and rural life of Latin Americans, cultural institutions (family, life, religion, work, etc.), pre-Colombian civilizations, the Spanish Conquest and Colonial period, the fight for Independence, relations with the U.S., and current events. Prerequisites: SPAN 311 and SPAN 312W with a grade of C or better.

SPAN 331. Introduction to Spanish Literature: Medieval to 1700. 3 Credits.
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. Prerequisites: SPAN 311 and SPAN 312W with a grade of C or better.

SPAN 332. Introduction to Spanish Literature: 1700 to Present. 3 Credits.
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-19th centuries; and relate the texts read in class to their corresponding historical contexts. Prerequisites: SPAN 311 and SPAN 312W with a grade of C or better.

SPAN 333. Introduction to Early Latin American Literature. 3 Credits.
This course will give students a broad knowledge of Spanish American literature from its origins in pre-Colombian 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. The course cultivates a general understanding of the complex and rich history of Latin America and its varied cultural production. Students engage in a critical textual analysis that focuses on the artistic and literary forms and their connection to Latin America's socio-cultural context. Prerequisites: SPAN 311 and SPAN 312W with a grade of C or better.

SPAN 334. Introduction to Modern Latin American Literature. 3 Credits.
The course will give students a broad knowledge of Spanish American literature from Modernists to the post-Modernists to the contemporary novelists, short story writers, poets and dramatists. It cultivates a general understanding of the complex and rich history of Latin America and its varied cultural production. Students engage in a critical textual analysis that focuses on the artistic and literary forms and their connection to the socio-cultural context. Prerequisites: SPAN 311 and SPAN 312W with a grade of C or better.

SPAN 336. Business Spanish: Language and Culture. 3 Credits.
This course aims to equip students for the eventuality of working with or for a Spanish company here or abroad. It is a language course, with a strong cultural component, for the intermediate learner. The emphasis of the course is on Spanish language usage in personal, business, and employment situations. The course provides a background for all students regardless of specific career goals. Students learn about cultural mores and social etiquette, engage in situational role playing, and prepare for job interviews. Students will combine their various practical assignments, involving realistic employment-seeking tasks, into an electronic portfolio of neatly-kept revisions. Prerequisites: SPAN 311 and SPAN 312W or permission of instructor.

SPAN 339. Practicum. 1-3 Credits.
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. Prerequisites: nine credit hours at the 300 or 400 level.

SPAN 395. Topics in Spanish. 1-3 Credits.
Selected topics, genres, authors and/or literary, cultural, socio-political, or historical movements in the Spanish-speaking world. May be repeated for credit if the topic is different. Prerequisites: SPAN 311 and SPAN 312W.

SPAN 396. Topics in Spanish. 1-3 Credits.
Seminars engage students in in-depth study of a specified topic through readings, research and oral and written student reports. Special attention is paid to theoretical and bibliographic issues. Topics vary according to the areas of expertise and professional interests of departmental faculty. May be repeated if topics are different. Prerequisites: SPAN 311 and SPAN 312W.
SPAN 407/507. Advanced Grammar and Syntax. 3 Credits.
This class is designed to solidify and refine students' working knowledge of written skills in the language, with an emphasis on increasing their written sophistication. Focus is on analysis of vocabulary, grammar, and cultural nuances in the syntax to examine how language reflects the ways of life and beliefs of its speakers, contrasted with the extent of language's influence on culture. Students will refine their skills in written inter-cultural communication, paying attention to idioms and the fine points of "cultural grammar," communicative competence and specialized discourse to develop excellent communication skills. This course is intended to prepare students for using their knowledge of language and culture in professional settings. Prerequisites: SPAN 311, SPAN 312W, SPAN 320 or SPAN 321, and SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334.

SPAN 410/510. Spanish Applied Linguistics. 3 Credits.
This course provides an introduction to Spanish linguistics and establishes the basis for the application of linguistic principles, including an introduction to the description and organization of data dealing with phonology (how sound patterns form words), discussion on topics in morphology (word formation and verbal inflection) and the description and organization of data dealing with syntax (how words combine to form phrases and sentences). In addition, the course analyzes the regional variations of Spanish (dialectology), and applying linguistics concepts, students contrast and compare the regional categories of Spanish use world-wide. It will provide students with a level of knowledge to make connections between the structure of Spanish and relevant issues in contemporary Hispanic linguistics, such as second language learning, language variation, bilingualism, and Spanish in the United States. Prerequisites: SPAN 311, SPAN 312W, SPAN 320 or SPAN 321, and SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334.

SPAN 415/515. SPAN 333 or SPAN 334.

SPAN 449/549. Border Culture and Literature. 3 Credits.
Students study a variety of current cultural texts from the U.S. and Mexico to explore the multiplicity of images that surround and define the highly contested and increasingly important area of the U.S.-Mexico border. Discussions are grounded in an ideological analysis with the goal of developing a description of the historical and social parameters and strategies that are utilized in the critical revision of the Borderlands. Specifically, this course focuses on questions dealing with subaltern identities, for example women, indigenous groups, immigrants, and the poor. Prerequisites: SPAN 311, SPAN 312W, SPAN 320 or SPAN 321, and SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334.

SPAN 469/569. Hispanic Film. 3 Credits.
A topical study of the major works of Spanish and Latin American film from Bunuel to the present. The course will explore many issues, including those related to gender, race, symbolism, and class struggle. (cross-listed with COMM 443/COMM 543) Prerequisites: SPAN 311, SPAN 312W, SPAN 320 or SPAN 321, and SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334.

SPAN 471/571. Hispanic Women Authors. 3 Credits.
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. (Cross-listed with WCS 471/WCS 571) Prerequisites: SPAN 311, SPAN 312W, SPAN 320 or SPAN 321, and SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334.

SPAN 473/573. Contemporary Latina Literature: From Borders to Crossroads. 3 Credits.
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. Prerequisites: SPAN 311, SPAN 312W, SPAN 320 or SPAN 321, and SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334.

SPAN 475W. Spanish Senior Research Seminar. 3 Credits.
The 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. Prerequisites: Senior standing; SPAN 311; SPAN 312W; SPAN 320 or SPAN 321; SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334; and grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

SPAN 495/595. Topics in Spanish. 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: SPAN 311, SPAN 312W, SPAN 320 or SPAN 321, and SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334.

SPAN 496/596. Topics in Spanish. 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: SPAN 311, SPAN 312W, SPAN 320 or SPAN 321, and SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334.

SPAN 497. Tutorial Work in Special Topics in Spanish. 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: SPAN 311, SPAN 312W, SPAN 320 or SPAN 321, and SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334.

SPAN 498. Tutorial Work in Special Topics in Spanish. 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: SPAN 311, SPAN 312W, SPAN 320 or SPAN 321, and SPAN 331 or SPAN 332 or SPAN 333 or SPAN 334.

Old Dominion University 504
SPED - Special Education

SPED 404/500. 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: a grade of C- or higher in SPED 400 or a grade of B- or higher in SPED 500.

SPED 403. 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: a grade of C- or higher in SPED 400 and SPED 402 or a grade of B- or higher in SPED 500 and 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.

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. Prereq or coreq: a grade of C- or higher in SPED 400 or a grade of B- or higher in SPED 500.

SPED 410. Special Education for Early Childhood, Birth-8. 3 Credits.
The course will review early childhood development and include 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 411/511. Collaboration and Transitions. 3 Credits.
This 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 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: a grade of C- or higher in SPED 400 and SPED 402 or a grade of B- or higher in SPED 500 or 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. Exceptional Learners: Foundations of Special Education - Education Classroom. 3 Credits.
This 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 418/518. Instructional Strategies to Meet Diverse Learning Needs in Math. 3 Credits.
This course covers instructional strategies necessary to teach mathematics to students with diverse learning needs in elementary and secondary settings. Students will study and apply pedagogy-based research on how learning takes place and strategies for differentiating instruction for the unique needs of diverse learners. Students will address and apply effective research-based methodology and evaluation standards. Prerequisites: Permission of the instructor.

SPED 428/528. Instructional Strategies for Students Accessing the Adapted Curriculum. 3 Credits.
This course addresses the characteristics and instructional strategies of students accessing the adapted curriculum. Emphasis is on assessment, program development, academic, and functional skills instruction. This course addresses the needs of individuals with severe and/or profound multiple disabilities. 45 Hour Practicum Prerequisites: a grade of C- or higher in SPED 400 and SPED 411 or a grade of B- or higher in SPED 500 and SPED 511, and passing scores on the Praxis Core Academic Skills for Education Tests or equivalent as prescribed by the Virginia Board of Education.

SPED 432/532. Characteristics of Students with Visual Impairments. 3 Credits.
This course 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. It 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. Prereq or coreq: 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 440/540. Assistive Technology for Diverse Students. 3 Credits.
This course provides lectures for pre-service and in-service teachers and related service providers of special populations in the use of assistive technology (AT) devices and services, and augmentative alternative communication ( AAC) systems for instructional programs and computer applications. Study will involve compliance with federal and state laws, and national and state standards related to providing assistive technology to diverse students. Prerequisites: SPED 400/SPED 500.

SPED 441/541. Teaching Students with Severe Physical and Sensorimotor Disabilities. 3 Credits.
This course reviews techniques for working with students who have severe physical and sensorimotor disabilities. Course emphasis is on proper positioning and handling for students with atypical motor/muscle development who function at developmental levels between birth and five years. Practicum of 45 hours required. Prerequisites: SPED 400/SPED 500 and passing scores on the Praxis Core Academic Skills for Education Tests or equivalent as prescribed by the Virginia Board of Education.

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. Practicum of 45 hours required. Prerequisite: SPED 400 or SPED 500 and passing scores on Praxis Core Academic Skills for Educator Tests or equivalent as prescribed by the Virginia Board of Education.

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. Practicum of 45 hours required. Pre- or corequisite: a grade of C- or higher in SPED 400 or a grade of B- or higher in SPED 500 and passing scores on Praxis Core Academic Skills for Educator Tests or equivalent as prescribed by the Virginia Board of Education.

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. Observation of 20 hours in an infant-toddler program is required. Pre- or corequisite: a grade of C- or higher in SPED 400 or a grade of B- or higher in SPED 500.

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. Students enrolled at the graduate level complete 9 credit hours. 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 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 and Time Series Analysis. 3 Credits.
Topics include theory of least squares, simple linear regression, multiple regression and residual analysis. Multicollinearity issues, regression on dummy variables, extensions to dependent errors and introduction to elementary time series, including auto-regressive and moving-average models will also be discussed. Fitting and interpreting the models using SAS and R software for real data is emphasized. Prerequisites: A grade of C or better in STAT 330 or STAT 310 or STAT 431/STAT 531. Pre- or corequisites: 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/STAT 505 and two of STAT 435/STAT 535, STAT 437/STAT 537, STAT 447/STAT 547 and STAT 450/STAT 550.
STAT 494. Entrepreneurship in Statistics, 3 Credits.
This course is designed to help students enhance their personal and professional development through innovation guided by faculty members and professionals. It offers students an opportunity to apply their knowledge of statistics to the development of a new product, business, nonprofit program, or other initiative. The real world experiences that entrepreneurship provide will help students understand how academic knowledge leads to transformations, innovations, and solutions to different types of problems. This course is administered as an independent project for individual students, or as group projects. Prerequisites: 3.0 GPA and permission of the chief departmental advisor.

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.
This course 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.
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.
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 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.
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 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.
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. Prerequisite: junior standing or permission of the instructor.

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.
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. Prerequisites: approval by the department and Career
Development Services, in accordance with the policy for granting credit for
Cooperative Education programs.

STEM 370T. Technology and Society. 3 Credits.
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.)
Prerequisites: grade of C or better in ENGL 211C or ENGL 221C or
ENGL 231C; junior standing or permission of the instructor.

STEM 382. Industrial Design. 3 Credits.
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. Prerequisites: junior standing.

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
reforulated. Corequisite: STEM 485. Prerequisites: Junior standing,
attendance to the MonarchTeach program plus two credit hours of science or
math courses.

STEM 433/533. Developing Instructional Strategies PreK-6:
Mathematics. 3 Credits.
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. Prerequisites: MATH 302; FOUN 301,
and TLED 315.

STEM 434/534. Developing Instructional Strategies PreK-6: Science. 3
Credits.
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. Prerequisites: FOUN 301 and TLED 315.

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, SPED 313, passing scores on the Praxis Core examination
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.

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, SPED 313, passing scores on the Praxis Core examination
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.

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 468W or CHEM 468 or OEAS 468W or PHYS 468W or SCI 468,
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 495/595. Topics. 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. Prerequisite: permission of the instructor.

THEA - Theatre

THEATRE Courses

THEA 152R. Acting One. 3 Credits.
An introduction to the physical and vocal principles of performance coupled
with an opportunity to increase awareness of the constructed nature of social
interactions. Students will explore confident self-expression through the
physical, vocal, emotional and technical aspects of acting, as an art form and
a daily experience, in a format that encourages freedom of imagination and
personal growth. Emphasis is on the fundamental communication skills of
presence, body language, imagination, and social communication.

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.

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.

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 152R.

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. Cross-listed with COMM 271/DANC 271.

THEA 280T. Entertainment Technologies. 3 Credits.
This course is an introduction to the entertainment industry including working methods, processes, and equipment for live, recorded, and interactive entertainment. The exploration will include theatre, opera, dance, concert productions, theme parks, themed-retail, film production, immersive, interactive and virtual environments, and gaming technology. Attention is given to the positive and negative aspects of entertainment technologies and how they impact culture and society.

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 152R 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 324. British Media in London. 3 Credits.
This is an immersive London based study of the historical, social and artistic impact of Britain's media on the world. From dramas to documentaries to journalism, the UK serves as one of the world's most reliable outlets for exacting thought, analysis, aesthetic sensibility and production standards. From Shakespeare to James Bond to Harry Potter, British productions garner some of the world's highest audiences. The BBC alone has an expansive footprint in all international media. In this course students will visit key media entities and professionals in their studios, soundstages and theatres. Prerequisite: COMM 270A or THEA 270A.

THEA 325. Sound Design for Stage and Camera. 3 Credits.
This class builds upon the principles taught in Screenwriting 1 (or equivalent) using the short script as a basis for the exploration. Utilizing concepts of characterization, plot, dialogue and narrative style, students should complete the course with several production-ready short scripts. Prerequisites: COMM 346 or THEA 346.

THEA 326. Making African-American Cinema. 3 Credits.
This introductory course on African-American cinema will focus on a variety of contemporary films, media clips, and video presentations concerning issues and topics that reflect the diversity within the African-American community of young adults between the ages of 18 to 25. The main goal of the class is to review historical films produced for African-Americans and utilize that data to conduct research and develop projects that represent the cultural diapora of this audience, which is often not reflected in mainstream media, in Hollywood or major independent media outlets such as HBO or Showtime. Cross-listed with COMM 332. Prerequisite: Junior standing or permission of the instructor.

THEA 334. Narrative Adaptation. 3 Credits.
This course explores the ways teleplays, stage plays, and screenplays can be crafted using a variety of primary source materials. Through multiple screenings, writing exercises, and deep reading, it examines what constitutes an adaptable piece of prose and how that material can be transformed. Primary weight is given to the movement from novel to film. Prerequisite: COMM 346 or THEA 346.

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 342. Video Editing - Adobe Premiere. 3 Credits.
This course serves as an introduction to the art of video post-production. Students explore the theory and practice of various editing styles in order to gain a better understanding of how stories are constructed in the editing room. Through demonstrations and hands-on experience, students learn editing techniques with an in-depth examination of Adobe Premiere Pro. Prerequisite: Junior standing. Pre- or corequisite: COMM 271 or THEA 271 or DANC 271.
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. Advanced Production 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.
This course is an introduction to narrative screenwriting focusing on the traditional feature film. Students will study screenwriting principles through text reading, film viewing, script analysis and substantial writing assignments. Focus is on story structure, character development, action, dialogue, and proper screenplay format. Prerequisites: ENGL 110C with a grade of C or better and ENGL 211C with a grade of C or better.

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. Prerequisites: THEA 152R 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. Prerequisites: THEA 152R.

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 152R or permission of the instructor.

THEA 351. Scene Painting. 3 Credits.
The course will explore, through in-class demonstrations and exercises, the techniques of painting for the stage. It will introduce the visual aesthetic of the world of scenic art for the stage and how it impacts the effectiveness of storytelling. Prerequisites: THEA 225 or COMM 225.

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 152R and THEA 252.

THEA 353. Animation. 3 Credits.
This is a project oriented, studio class that will focus on the art of animated storytelling from the traditional perspective of stop motion animation. Students will engage in individual research, writing, storyboard, editing, and sound creation to produce original short animations. Crosslisted with COMM 353. Prerequisites: Junior standing or permission of instructor.

THEA 354. Drafting and Rendering for Stage and Screen. 3 Credits.
This course is an intermediate level course designed to introduce the student to the fundamentals of graphic skills necessary for the implementation of a scenic design on either the stage or in front of a lens. Techniques and skills will be demonstrated in drafting (hand and computer generated) and perspective sketching and rendering. Crosslisted with COMM 354. Prerequisites: COMM 225/COMTHEA 225.

THEA 355. Costume Crafts. 3 Credits.
This course will develop design principles and craft techniques to create a wide variety of costume crafts. The course will focus on individual research, design elements and technical challenges. Projects will encourage students to explore textile modification, various applications for clothing design, costume crafts and art materials. Prerequisites: Junior standing or permission of instructor.

THEA 356. Silhouette Animation. 3 Credits.
This is a project oriented, studio class that will focus on the art of animated storytelling through the use of silhouette animation. Individual research, writing, design and implementation of knowledge to create new projects will be necessary to successfully meet the requirements of the course. All of the projects and class exercises in this course will require students to combine writing, storyboard, a variety of art techniques, editing, and sound to produce original short animations. Prerequisite: Junior standing or permission of instructor.

THEA 357. Claymation. 3 Credits.
This is a project oriented, studio class that will focus on the art of animated storytelling from the traditional perspective of stop motion animation. Students will engage in individual research, writing, storyboard, editing, and sound creation to produce original short animations. Prerequisite: Junior standing or permission of instructor.

THEA 358. Post-Production with DaVinci Resolve. 3 Credits.
This course will introduce students to Blackmagic DaVinci Resolve, a complete Post-Production Suite. Students will work their way through all the “rooms” in DaVinci: Media, Edit, Color, Fairlight, and Fusion and Delivery. The main focus will be on editing and color correction, but advanced sound post in Fairlight and Compositing in Fusion will also be explored. The focus will be on mixing software-specific techniques with a deepening understanding of the underlying theories of editing, color theory and principles of sound. The students will learn and apply industry standard best practices in the field of audio visual post-production. This is a hands-on workshop style post-production course. Prerequisite: COMM 271 or DANC 271 or THEA 271.

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. Prerequisites: THEA 152R.

THEA 365. Internship in Film. 3,6 Credits.
Practicum/field experience in professional settings for students in all areas of Film. Pass/Fail only. Prerequisites: Approval of the Director of Film and major advisor.

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. Prerequisites: Approval of the department and the Career Development Services, in accordance with the policy for granting credit for Cooperative Education programs.

THEA 368. Internship for Theatre. 3 Credits.
Practicum/field experience in professional settings for students in all areas of Theatre. Pass/Fail only. Prerequisites: Approval of the Director of Theatre and major advisor.

THEA 369. Internship at the Virginia Stage Company. 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. Pass/Fail only. Prerequisites: Approval of Director of Theatre and VSC representative.
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 DANC 271.

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. Production/Performance Lab. 1 Credit.
This course provides students opportunities to participate in productions in
Theatre, Dance or Film. These positions provide hands-on experience in the
discipline. Cross-listed with DANC 373. Prerequisite: Junior standing or
permission of the instructor.

THEA 374. Production/Performance Lab. 1 Credit.
This course provides students opportunities to participate in productions in
Theatre, Dance or Film. These positions provide hands-on experience in the
discipline. Cross-listed with DANC 374. Prerequisite: Junior standing or
permission of the instructor.

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. Documentary Production I. 3 Credits.
This course offers the student an opportunity to explore the world of
documentary filmmaking. Students will perform research to develop
evidence in support of a thesis, then utilize the camera to capture a narrative
story based on the thesis. Through this process, the student is better able to
understand documentary filmmaking. Students will develop and deliver short
documentary films by the end of the semester. Prerequisites: THEA 271 or
COMM 271 or DANC 271 with grade of C or higher.

THEA 383. Directing the Actor. 3 Credits.
This course is designed as a practical guide for directors to elicit strong
performances from the actors who tell their stories. The class will establish
vocabulary and practice techniques that are equally applicable to work in
film or theatre. Ideally, the course will encourage students to think beyond
genre as they create work that is both dramatically and humanly compelling.
Prerequisites: THEA 271 or COMM 271 or DANC 271 or THEA 152R.

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 or DANC 271
with grade of C or higher.

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 or DANC 271
with grade of C or higher.

THEA 387. TV News Production. 3 Credits.
This course is designed to provide students with an introduction to the
reporting, writing, and production aspects of a television news program.
Students will learn how to create 15- and 30-minute news broadcasts by
developing story ideas and news gathering. Students will also learn the
intricacies of 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 television studio cameras. The goal of this
course is to produce weekly news programs worthy of broadcast on local
television. Students will assume the roles of reporter, writer, producer, floor
director, photojournalist, videographer, technician, and more. Prerequisites:
COMM 271 or THEA 271 or DANC 271 or COMM 382 or ENGL 382.

THEA 388. Motion Picture Aesthetics. 3 Credits.
This course is designed to develop within students a heightened and
multifaceted awareness and appreciation for aesthetics of a particular type -
 motion picture aesthetics. Aesthetic considerations impact us intellectually,
emotionally, psychologically, and viscerally. Professionals most definitely
employ a language to filmmaking. One must learn the language of motion
picture production and aesthetic design in order to convey concepts to their
audiences. Prerequisite: COMM 270A or THEA 270A.

THEA 389. Sound Recording and Mixing for Film. 3 Credits.
This course will explore the best concepts in recording, editing and mixing
audio for film and post-production. Students will be using Pro Tools
hands-on to sync and mix audio to picture. Topics will include location
audio, sound design, ADR, mixing, and more. Prerequisite: THEA 271 or
COMM 271 or DANC 271.

THEA 390. Improvisation. 3 Credits.
An exploration of creativity through structured exercises, games and
problems. Students participate in experiential 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. Cross-listed with DANC 390. Prerequisite: Junior standing or permission of the instructor.

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 or 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 439. WHRO Production. 3 Credits.
This is an experiential style course in the art and business of documentary
production in the hands-on, professional environment of WHRO, which
operates Hampton Roads’ PBS affiliate TV station as well as two public
radio stations. Students will be guided through the production of content
for WHRO by an ODU faculty member and the WHRO staff. Cross-listed
with COMM 439. Prerequisite: COMM 271 or THEA 271 or DANC 271.
Pre- or corequisite: COMM 380 or COMM 383 or COMM 384 or COMM 385 or COMM 387 or COMM 388 or COMM 389 or COMM 446.

THEA 440. Documentary Filmmaking Study Abroad. 3 Credits.
This is an in-the-field study abroad course where students will, in small
groups, produce a short documentary film about a local NGO (Non-
Governmental Organization) creating positive change in the local
community. Prerequisite: THEA 271 or COMM 271 or DANC 271 with a
grade of C or higher.

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 152R
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 270 or COMM 270 or
DANC 270.

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 383 or
COMM 383 with a grade of C or higher.
THEA 449/549. TV Screenwriting. 3 Credits.
This course concentrates on the development and delivery of industry standard one hour long TV scripts and the associated script "bible." Students will study sample scripts from broadcast TV programs and develop their own spec scripts. Cross-listed with COMM 449. Prerequisite: COMM 346 or THEA 346 with a grade of C or higher.

THEA 49W/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. Prerequisites: THEA 152R, 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 451. Costume Design for Opera and Musical Theatre. 3 Credits.
This course will provide opportunities for hands-on training for all stages of the design process. Students will learn sewing techniques, create hand-dyed fabric, construction techniques, period costume research, character analysis, wig construction, and assist with the design. Project designs will be used in a main stage production presented by the Communication & Theatre Arts and Music departments at Old Dominion University. Students will also have the opportunity to run a live performance and assist with garment care, make-up, hair design and costume props. Prerequisites: Junior standing or permission of 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 152R, THEA 252 and THEA 352.

THEA 453. Voice Over. 3 Credits.
This course is for students who are interested in the field of voice over for commercials, narration, industrials, animation, Internet, and gaming. Students will practice voicing copy using acting techniques, vocal techniques, building characters, and analyzing copy. Students will learn to select, edit and prepare copy for a future demo and learn to perform cold voice over auditions. This is a performance-oriented course that is a workout session each day. Cross-listed with COMM 453. Prerequisites: Junior standing or permission of instructor.

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. Prerequisites: THEA 152R.

THEA 461/561. Arts Administration. 3 Credits.
This course is an examination of the arts institutions, issues, and forces that shape the contemporary arts world including artists' rights, public art, corporate support, censorship, and multiculturalism. The course will cover Community Involvement, Collaborative Processes and Civil Societies, Theory and Practice of Planning, Public and Non-Profit Management, Organizational Behavior, Labor Management Relations, and Entrepreneurial Leadership. Prerequisite: Senior standing.

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 152R and THEA 252 or permission of instructor.

THEA 473. Production/Performance Lab. 1 Credit.
This course provides students opportunities to participate in productions in Theatre, Dance or Film. These experiences provide hands-on experience in the discipline. Cross-listed with DANC 473. Prerequisite: Junior standing or permission of the instructor.

THEA 474. Production/Performance Lab. 1 Credit.
This course provides students opportunities to participate in productions in Theatre, Dance or Film. These experiences provide hands-on experience in the discipline. Cross-listed with DANC 474. Prerequisite: Junior standing or permission of the instructor.

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. Documentary Production II. 3 Credits.
Students will continue the work performed in THEA 380 with more advanced proposals, research, and production work. 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. Students complete the course with a complete feature film screenplay. Prerequisites: COMM 346 or THEA 346.

THEA 483. Advanced Video Project. 3 Credits.
This is an intensive capstone course in film production. Students experience pre-production, production, and post-production phases while creating a product to be entered in regional and national competitions. Prerequisites: COMM 383 or THEA 383.

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. Class may be repeated for credit as long as the genres are different. Prerequisites: COMM 270A or THEA 270A.

THEA 486/586. Advanced Filmmaking. 3 Credits.
This course offers students an opportunity to collaborate on a faculty led project beyond the scope of typical classroom projects. Students will execute an assigned duty for the duration of the semester. Prerequisites: three of the following: COMM 346 or THEA 346, COMM 383 or THEA 383, COMM 385 or THEA 385, COMM 386 or THEA 386, COMM 388 or THEA 388, COMM 483 or THEA 483.

THEA 487. Advanced TV News Production. 3 Credits.
This course is designed to provide students with advanced instruction in reporting, writing, and production for a television news program. Students will take on important roles in 15- and 30-minute news broadcasts and refine their skills in shooting and editing video. The goal of this course is to produce weekly news programs worthy of broadcast on local television. Students will receive significant experience in front of the camera as news, sports, and entertainment anchors/reporters as well as leadership positions in the television studio during the live broadcasts. Prerequisites: COMM 387, THEA 387 or ENGL 387.
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. Prerequisites: Junior standing and permission of the College of Education.

THEA 492. Cinematography 2. 3 Credits.
This course builds on the fundamentals learned in Cinematography 1, exploring advanced camera and lighting techniques primarily used in narrative cinema. Advanced cameras, grip, electric, and lighting equipment will be covered, exposing students to gear and practices beyond the scope of a standard student production. This is a production class. Prerequisite: COMM 385 or THEA 385.

THEA 493. Feature Film Production. 6 Credits.
This intensive course will bring students onto the set of a feature film production, working crew positions as the film is shot. Cross-listed with COMM 493. Prerequisites: COMM 271/THEA 271/DANC 271 and two of the following: COMM 380/THEA 380, COMM 383/THEA 383, COMM 385/THEA 385, COMM 386/THEA 386, COMM 389/THEA 389, COMM 483/THEA 483, COMM 486/THEA 486, COMM 492/THEA 492 with a grade of C or better.

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 195. Topics in Education. 1-3 Credits.
Explores contemporary problems and trends in education. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation.

TLED 301. Foundations and Introduction to Assessment of Education. 3 Credits.
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 Core 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. Prerequisites: sophomore standing.

TLED 315. Foundations of Education: Historical and Contemporary Issues, 3 Credits.
This course is designed to develop an understanding of the historical, philosophical, and sociological foundations underlying the role, development, and organization of public education in the United States, compliance with federal and state laws, and national and state educational standards related to the impact of past and current trends in education, with attention to the legal status of teachers and students in schools today. Prerequisites: ENGL 110C and sophomore standing.

TLED 320. Perspectives on the Young Child and the Family, 3 Credits.
This course examines the familial lives of young children (Birth through Grade 3) and supports understandings of working with parents and families in early childhood settings. Family systems theory provides the basis for study and guides understandings of contemporary family structures. The stages of the family life cycle are explored; principles of healthy family functioning are emphasized to promote healthy growth for children. Prerequisites: FOUN 301 and TLED 315.

TLED 325. Communication and Collaboration in Education Settings, 3 Credits.
This course focuses on concepts and theories related to interpersonal relationships and the learning of skills necessary for effective communication, professional collaboration, and relationship development in educational settings. There will be an emphasis on complex topics surrounding communication and collaboration with families, colleagues and other professionals from culturally and ethnically diverse populations, and families with students at-risk for or with disabilities. The purpose of this course is to teach students the basics of good communication and collaboration skills to facilitate the development of successful relationships in an educational setting. Prerequisites: FOUN 301 and TLED 315.

TLED 326. Socio-Cultural Perspectives in Education, 3 Credits.
This course will utilize a framework of sociocultural theory situated within culturally sustaining pedagogical practices to explore issues related to race, ethnicity, class, gender, sexuality, religion, and language use. Students will learn to create an educational environment that values diversity and employs research-based strategies. The course also examines and evaluates multicultural and global literature that explores issues of diversity. Prerequisites: ENGL 110C. Pre- or corequisite: TLED 315.

TLED 328. Observation and Assessment in Early Childhood, 3 Credits.
This course examines the observation/assessment techniques used in early childhood classrooms as part of a coordinated approach to implement a reflective, high quality early childhood classroom. The purpose of this course is to introduce and support students’ development of skills related to the observation and interpretation of children’s daily activities and behaviors. Prerequisites: TLED 320.

TLED 330. The Arts in Early Childhood and Elementary Education, 3 Credits.
An exploration of principles, methods, and materials for teaching the arts to young children. Emphasis is on making, interpreting, and designing meaningful art experiences for young children pre-K-grade 3. Students will be asked to participate in activities associated with making and viewing art, as well as design comprehensive learning experiences that encourage children to make and respond to art through conversation, storytelling, play, dramatics, movement, music, and art making. Prerequisites: FOUN 301 and TLED 315.
TLED 337. Literature for Young Children. 3 Credits.
This course is designed to provide students with approaches for introducing young children to literature and reading. The course will examine a variety of children's literature genres and explore relationships between language, theory, politics, ideology and print material. Students will design activities that extend children's literacy experiences, reading enjoyment, writing capabilities, and incorporate cultural and linguistic diversity in social studies, math, science, and the arts. Prerequisites: TLED 320.

TLED 338. Integrated Methods & Curriculum in Early Childhood Ed: Birth-Pre-K. 4 Credits.
This course examines the development of curriculum and instructional practices for children in infant, toddler, and preschool settings. The course will focus on the principles and methods of understanding and working with the young child across the content areas of early mathematics, science, literacy, social studies, and the arts. Course includes a 40 hour practicum placement in an early care classroom. Prerequisites: TLED 330.

TLED 360. Classroom Management and Discipline. 2 Credits.
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. Prerequisites: TLED 290 or TLED 301 or MUSC 300 with a C- or higher.

TLED 395. Topics in Education. 1-3 Credits.
Explores contemporary problems and trends in education. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation. Prerequisites: junior standing.

TLED 408. Reading and Writing in Content Areas. 3 Credits.
This course examines and promotes literacy development in all content areas, including the development and use of disciplinary comprehension and writing/production skills. Students will explore and consider a repertoire of questioning strategies, and strategies in literal, interpretive, critical, analytical, and evaluative comprehension across the curriculum, grades 6-12. Prerequisites: a grade of C- or higher in TLED 430 and SPED 313 or a grade of C- or higher in one of the following: SEPS 297, MUSC 300, TLED 301, STEM 351, MUSC 335T, ARTS 279, HPE 200, HPE 317, SPED 400, and TLED 474.

TLED 425. Creating and Managing Learning Environments. 3 Credits.
This course is designed to help new teachers or pre-service teachers to be successful in the modern urban classroom when faced with a diverse student population with a wide range of abilities, interests, and cultures. The course provides pedagogical knowledge for dealing with special learning conditions, diversity, and the management of students in classrooms. Students learn to impart an understanding of classroom management strategies including a repertoire of questioning strategies, summarizing and retelling skills, and strategies in literal, interpretive, critical, and evaluative comprehension, as well as redirecting behaviors in a positive manner. Prerequisites: FOUN 301 and TLED 315.

TLED 426. Introduction to Literacy Research, Theory and Practice in the Classroom. 3 Credits.
This course will provide students with an overview of the foundations of research, theory, and best practices in literacy instruction. Emphasis is placed on providing candidates with approaches rooted in culturally sustaining pedagogy to foster equity and engagement for all learners. The course will assist in facilitating the student's professional preparation as a teacher who promotes the success of all students by facilitating the development, articulation, implementation, and stewardship of excellent literacy instruction. Prerequisites: FOUN 301 and TLED 315.

TLED 430W. PK-12 Instructional Technology. 3 Credits.
Classroom technology and learning strategies are explored through authentic technology and writing activities. This writing intensive (W) course uses contemporary productivity tools and Internet resources to develop and evaluate progressive instructional techniques and K-12 standards-based curriculum materials, which have changed as a result of the development and integration of technology in the classroom. Prerequisites: ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better and TLED 301 or HPE 200 or TLED 474 or SPED 400.

TLED 432/532. Developing Instructional Strategies PreK-6: Language Arts. 3 Credits.
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 NCSS national instructional standards and the Virginia Standards of Learning. Prerequisites: ENGL 110C. Corequisite: TLED 426.

TLED 435/535. Developing Instructional Strategies PreK-6: Social Studies. 3 Credits.
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. Prerequisites: HIST 104H, GEOG 100S, FOUN 301, and TLED 315.

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. Prerequisites: TLED 301 or TLED 290 or TLED 430 or SPED 313, passing scores on Praxis Core or Praxis I (if passing scores were achieved prior to January 1, 2014) 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.

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 TLED 290, TLED 430, SPED 313, passing scores on Praxis Core or Praxis I (if passing scores were achieved prior to January 1, 2014) 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.

TLED 468/568. Language Acquisition and Reading for Students with Diverse Learning Needs. 3 Credits.
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. Prerequisites: junior standing.

TLED 474/574. Foundations and Contemporary Issues in Early Childhood Education. 3 Credits.
This course addresses current issues related to children and families in early childhood settings. Contemporary research on pedagogical and formative assessment practices related to the education of young children will be discussed through critical exploration. This course will also have an associated 40 hour practicum (20 hours in an infant or toddler classroom and 20 hours in a preschool age classroom). Prerequisites: Instructor approval required.
TLED 476. Practical Applications in the World of Children. 3 Credits.
This course is part of the Children's Rights interdisciplinary minor. Supplied 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. Prerequisites: junior standing.

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 pre-K and 4th-6th grade classrooms in an accredited public or non-public school, per program requirement. Prerequisites: TLED 432, TLED 435, STEM 433, STEM 434, and admission to an approved teacher education program.

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 Pre-K program are required to complete 35 hours in the Children's Learning and Research Center. Attendance at seminars and debriefing sessions is required. Prerequisites: admission into an approved teacher education program. Pre- or corequisite: TLED 478.

TLED 480/580. Multicultural Young Adult Literature in Schools. 3 Credits.
This course will explore the reading and teaching of diverse young adult literature. Topics addressed include ideas about adolescents and their learning practices; characteristics of young adult literature and literary criticism; analysis of texts from a range of young adult genres; methods for teaching young adult literature; and lesson and unit design. Prerequisite: Junior standing.

TLED 483/583. Seminar in Teacher Education. 1 Credit.
Explores issues, problems, concerns, and processes related to teaching and to entering the profession of teaching. Passing scores on Elementary Education Multiple Subjects Assessment in licensure content area, passing scores on the Virginia Communication and Literacy Assessment (VCLA), and where appropriate passing scores on Reading for Virginia Educators are required to pass this course. Prerequisite: admitted to approved teacher education program.

TLED 485. Teacher Candidate Internship. 12 Credits.
Internship in school. Available for pass/fail grading only. Prerequisites: completion of all program requirements and admission into an approved program in teacher education.

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 Core examination 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.

TLED 487. Teacher Candidate Internship for Early Childhood Education. 12 Credits.
Field-based 14-week experiences in the early childhood setting that include a minimum of 150 hours of direct instruction. The teacher candidate internship is the culminating experience of all teacher education programs. This experience is a crucial part of a teacher candidate’s preparation to becoming a professional educator. Prerequisites: TLED 493 and admission to an approved teacher education program.

TLED 490. The Child and the Family: PreK-3. 3 Credits.
This course examines the familial lives of young children (Birth through Grade 3) and supports understandings of working with parents and families in early childhood. Family systems theory provides the basis for study and guides understandings of contemporary family structures. The stages of the family life cycle are explored; principles of healthy family functioning are emphasized to promote healthy growth for children. Prerequisites: instructor approval required.

TLED 492. Integrating Instruction: Mathematics and Science Across the Early Childhood Curriculum. 3 Credits.
This course emphasizes the development of young children's problem solving skills, strategies, and abilities and the promotion of active science and math explorations within early childhood classrooms. Multiple perspectives and approaches to planning, teaching, and assessing science and mathematics in the early childhood classroom are explored and practiced. This course includes a 40 hour practicum experience in an early childhood classroom. Prerequisite: MATH 302, TLED 328, and admission to an approved teacher education program.

TLED 493. Integrating Literacy and Social Studies Across the PreK -3 Curriculum. 3 Credits.
This course emphasizes the development of young children's multiple literacies and the promotion of active literacy and social studies explorations within early childhood classrooms. Multiple perspectives and approaches to planning, teaching, and assessing literacy and social studies in the early childhood classroom are explored and practiced. This course includes a 40 hour practicum experience in an early childhood classroom. Prerequisites: TLED 492, HIST 104H, GEOG 100S, TLED 337, and admission to Teacher Education. Pre- or corequisite: TLED 426.

TLED 495/595. Topics in Education. 1-4 Credits.
Explores contemporary problems and trends in education. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation. Prerequisites: junior or graduate standing.

TLED 496/596. Topics in Education. 1-3 Credits.
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. Prerequisites: junior or graduate standing.

TLED 497/597. Independent Study. 1-3 Credits.
Hours to be arranged. 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. Prerequisite: junior standing.

UNIV - University

UNIVERSITY Courses

UNIV 068. Internship. 0 Credits.
Student participation in a professional work experience for which credit will not apply to the degree. Approval for enrollment is determined by Career Development Services. Experience must be related to the student's major or career area of interest, include adequate supervision by a professional, and include at least an average of 8 hours per week. Prerequisites: good academic standing.
UNIV 094. Entrepreneurship. 0 Credits.
Student participation in an entrepreneurial experience for which credit will not apply to the degree. Approval for enrollment is determined by the Center for High Impact Practices. Experience must be related to the student's major or career area of interest, include adequate supervision by faculty member or a professional, and include at least an average of eight hours per week. Prerequisites: good academic standing.

UNIV 100. University Orientation. 1 Credit.

UNIV 101. Introduction to the College of Sciences. 1 Credit.
Presents the relationship between majors in the College of Sciences and the students' career goals for students planning to major in a science. Provides an orientation to the University emphasizing the learning skills needed for Science majors.

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 115. Learning Communities Seminar. 0 Credits.
This course serves as the common course for learning communities. Students will develop a sense of community as they attend, study, and participate in various activities and events with other students, peer mentors, faculty or advisors.

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 295. Topics in Career Management. 1 Credit.
A study of selected career-related topics. Titles for specific course offerings will appear in the course schedule.

UNIV 300. Introduction to Entrepreneurship Across the Disciplines. 3 Credits.
This course is a survey of entrepreneurship and is designed to introduce upper-level undergraduate students (juniors and seniors) to a wide range of approaches designed to facilitate innovation, foster start-up businesses, enable growth and ensure the continued viability of emerging and mature technical enterprises. The course will focus on entrepreneurial thinking and action and will explore the attitudes and behaviors that most frequently result in entrepreneurial success. This course will address the theories that underlay successful venture creation as well as practices that have proven to be effective. Prerequisite: ENGL 110C.

UNIV 395. Topics in Career Management. 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.
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 407/507. Design Thinking. 3 Credits.
Design thinking is a human-centered approach to innovation that uses design methods and tools to integrate the needs of people and organizations, the opportunities of technology, and the requirements for personal, organizational, and business success. The design thinking course introduces students to a robust process for understanding problems, ideation, innovation, and entrepreneurship. This course is facilitated using workshops where students will work in project teams in a design thinking innovation challenge. Prerequisite: ARTH 121A, ARTS 122A, COMM/THEA 270A, DANC 185A, MUSC 264A, or THEA 241A.

UNIV 495. 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.

WCS - World Cultural Studies

WORLD CULTURAL STUDIES Courses

WCS 100L. Introduction to World Literatures and Cultures. 3 Credits.
This multicultural course introduces the student to the forms and meanings of cultural expressions from around the world, with an emphasis on world literature. It provides students with the skills necessary for the appreciation and comparative analysis of these works 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, class, and struggles for social justice. All works will be read in English.

WCS 307. Understanding European Culture through Film. 3 Credits.
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) Prerequisite: Junior standing or permission of instructor.

WCS 310. Japan: A Cultural Odyssey. 3 Credits.
Exploration of Japanese culture and society from local and global perspectives. Topics may include language, arts, literature, music, food, traditional and contemporary culture, entertainment, media, religion, gender, education and work. The course aims to foster in-depth cultural understanding beyond stereotypes and to develop critical thinking and analytical skills to reflect on one's own experiences and assumptions about cultural similarities and differences. All readings, discussions, and lectures in English. No knowledge of Japanese is necessary. Cross-listed with JAPN 310. Prerequisites: ENGL 110C and junior standing or permission of instructor.
WCS 311. Communicative Competence: Speaking and Listening. 3 Credits.
This course is primarily a conversation course to develop linguistic and cultural proficiency in verbal communication. Task-oriented communication strategies in cross-cultural training will be practiced by presenting students with models that demonstrate appropriate linguistic and cultural competencies. Students will practice these skills by role-playing, giving presentations, enriching self-awareness with practiced in-group discussions on various topics (such as, prejudice, racism, values, and customs) that dispel stereotypes and foster more in-depth social-cultural understanding, and with participation in guided cultural encounters. Students will improve their listening and comprehension skills and deepen cultural proficiency by learning how to communicate and collaborate with other people and cultures in a global age. Prerequisite: ENGL 110C.

WCS 312W. Communicative Competence: Writing and Reading. 3 Credits.
This is an intensive writing course designed with writing assignments that examine various cultural contexts that enable students to understand cultural content, style, audience and organization. The main objective of the course is increased awareness of and sensitivity to appropriate word choice, and syntax in the targeted languages. Students will engage in writing for different cultural audiences and in varied contexts such as literary, artistic and media expressions around the world. Special emphasis is placed on the methodology of close reading as students hone the analytics skills and vocabulary necessary to interpret idioms, regionalism, cultural expressions and overall intercultural skills observed in various genres and cultures. Students will analyze compelling global issues and the diverse cultural perspectives that inform them. Prerequisite: A grade of C or better in ENGL 110C.

WCS 321. Human Rights and World Literature and Cultures. 3 Credits.
Struggles for human rights and social justice often find their most evocative expression in literary works from around the world. In this course, students will work toward an understanding of different cultural perspectives that inform world concepts of human rights. We will focus on novels, short stories, and poetry. We will also consider the fundamental value of these artistic expressions as both spaces of empathy and agents of change in society. As we discover texts from around the world we will also delve into important socio-political contexts that inform each work. Lastly, this course will turn the lens toward the reader's own values and ideas, and inspire a reconsideration of our place in this world. Prerequisite: A grade of C or better in ENGL 110C.

WCS 330. Contemporary Cultures and Media. 3 Credits.
A study of film as a means of communication from an intercultural perspective. The course is designed to cultivate an ability to deal with film in a critical way, as well as broaden understanding of film and culture in a global context. A variety of cinematic traditions will be examined including film works from Europe, the Middle East, Asia, Africa, and North and South America. Prerequisite: A grade of C or better in ENGL 110C.

WCS 395. Topics in World Cultural Studies. 3 Credits.
This course invites students to discover approaches to global problems and concerns through an analysis of cultural expressions from around the world. Students will consider the ways in which literary and artistic expression (literature, film, visual art, music) draw from and impact broader social and political contexts. Prerequisites: A grade of C or better in ENGL 110C.

WCS 400. Global Cultural Studies. 3 Credits.
This course will examine selected cultural studies perspectives on mass communication. It will cover cultural studies philosophies, theories, and/or approaches to the study of cultural artifacts and practices that may include some of the following: postmodernism, deconstruction, feminism, and post-colonialism. The readings will include theoretical texts as well as artistic or cultural texts that will more clearly illustrate the theoretical positions. Prerequisite: A grade of C or better in ENGL 110C.

WCS 407. Advanced Grammar and Syntax. 3 Credits.
This class is designed to solidify and refine students' working knowledge of written skills in the targeted languages, with an emphasis on increasing their written sophistication. Focus is on analysis of vocabulary, grammar, and cultural nuances in the syntax to examine how language reflects the ways of life and beliefs of its speakers, contrasted with the extent of language's influence on culture. Students will refine their skills in written inter-cultural communication, paying attention to idioms and the fine points of "cultural grammar," communicative competence and specialized discourse to develop excellent communication skills. This course is intended to prepare students for using their knowledge of language and culture in professional settings. Prerequisite: A grade of C or better in ENGL 110C.

WCS 410/510. Berlin-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. Prerequisite: A grade of C or better in ENGL 110C.

WCS 445/545. German Cinema I. 3 Credits.
The first half of the 20th century was the most creative and destructive period in German and European history. Its rich cultural achievements included Viennese psychoanalytical theory of the turn of the century, Art Nouveau, German Expressionism, and the avant garde aesthetics of the Weimar Republic. Conversely, World War I and II exposed the cultural agony and human depravity of modern civilization. This course will trace these various aspects and developments in a variety of exemplary genres. Readings and discussions in German. (Cross-listed with GER 443/GER 545 and COMM 444/COMM 544) Prerequisite: A grade of C or better in ENGL 110C.

WCS 471/571. Hispanic Women Authors. 3 Credits.
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. Prerequisite: A grade of C or better in ENGL 110C.

WCS 476/576. German-Jewish Literature and Culture. 3 Credits.
A survey of seminal texts by German-Jewish philosophers and writers from the Enlightenment to the present day, including Marx, Kafka, Freud, Schöntzer and Arendt. Prerequisite: A grade of C or better in ENGL 110C.

WCS 494. Entrepreneurship in World Languages and Cultures. 3 Credits.
This course is designed to help students enhance their personal and professional development through innovation guided by faculty members and professionals. It offers students an opportunity to integrate disciplinary theory and knowledge related to world languages and cultures through developing a nonprofit program, product, business, or other initiative with other students. Prerequisite: Junior standing.

WCS 495/595. Topics in World Cultural Studies. 3 Credits.
This course invites students to discover approaches to global problems and concerns through an analysis of cultural expressions from around the world. Students will consider the ways in which literary and artistic expression (literature, film, visual art, music) draw from and impact broader social and political contexts. Prerequisites: A grade of C or better in ENGL 110C.

WCS 496/596. Topics in World Cultural Studies. 3 Credits.
This course invites students to discover approaches to global problems and concerns through an analysis of cultural expressions from around the world. Students will consider the ways in which literary and artistic expression (literature, film, visual art, music) draw from and impact broader social and political contexts. Prerequisites: A grade of C or better in ENGL 110C.
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 is designed to develop students' skills in writing, critical reading, research, and argument while examining topics in women's studies. The course also covers the history of women's studies as a discipline and current opportunities for majors and minors. 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, transgender, 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 306. Women, the Environment, and Climate Change. 3 Credits.
This course will examine ways that women have been actively involved in environmental issues from earliest history through today. Students will assess their own connection to place and examine and access ecofeminist theory and national and global environmental justice movements, along with briefly reviewing gender and farming practices. Finally, the course will examine how climate change issues are affecting lives around the globe, including ours, and question how gender-, race-, and class-sensitive responses to the environmental challenges facing our planet can be created. Prerequisite: ENGL 110C.

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. Prerequisites: A minimum of one WMST course, junior standing and instructor approval.

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 402/502. Feminisms and Sexualities. 3 Credits.
This course will examine feminist approaches to the subject of sexuality in the twentieth and twenty-first centuries. The course examines theorizations of sexuality, such as radical, critical race, and transnational feminisms, queer theory, and trans studies. Key questions will be: how have feminists theorized sexualities? What does sexuality have to do with feminist studies or practices? How do other identities, such as race and class, inform sexuality? Prerequisite: WMST 201S, WMST 390T, or instructor approval.

WMST 405/505. Gender and Media. 3 Credits.
This course examines media-based sites of knowledge production using a feminist approach, in order to imagine new and more complex ways to think about media rhetorics; celebrity culture; digital media; and the politics of representation. Key questions will be: What roles do media play in shaping social movements? What are the promises and pitfalls of activist interventions in the realm of commercial culture? In what ways might we complicate narratives of co-optation or selling out? The class explores these questions using an intersectional lens attentive to the complex interconnections of race, class, gender, and sexuality. Case studies will include national, international, and transnational media events. Prerequisite: WMST 201S, WMST 390T, or instructor approval.

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 herstory assignments. Throughout the course, the process of knowledge construction is interrogated from a feminist perspective. Prerequisites: WMST 460W.
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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SEPS - STEM Education and Professional Studies

SMGT - Sport Management

Smoking Policy

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SPAN - Spanish

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STEM - Science, Technology, Engineering, and Mathematics Education

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