Bachelor of Science
Ocean and Earth Science with a Major in Oceanography (BS)

Richard Hale, 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 and core courses in Earth systems science. Students majoring in Oceanography complete a course-based research experience including both field work and laboratory analysis. In addition, students complete a suite of specialty courses specified in each major. A minimum grade of C or higher in all major and prerequisite courses is required for graduation.

Ocean and Earth Science with a Major in Oceanography

The Oceanography major is designed for students considering graduate work or employment in the pure and applied fields of oceanography. Students in the Oceanography major are strongly encouraged to minor in either biology, chemistry, or applied mathematics, according to their interest in graduate school and future career plans.

Requirements

Lower-Division General Education

- Written Communication (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#written) 6
- Oral Communication (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#oral) 3
- Mathematics (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#math) 3
- Language and Culture (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#language) 0-6
- Information Literacy and Research (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#information) 3
- Human Behavior (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#behavior) 3
- Human Creativity (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#creativity) 3
- Interpreting the Past (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#interpret) 3
- Literature (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#literature) 3
- Philosophy and Ethics (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#philosophy) 3
- The Nature of Science (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#nature) 8
- Impact of Technology (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#impact) 3
- Written Communication: grade of C or better required in both courses
- Mathematics: MATH 211
- Impact of Technology: met in the major by OEAS 220T
- Information Literacy and Research: met in the major by OEAS 130G
- The Nature of Science: CHEM 121N & CHEM 122N, CHEM 123N & CHEM 124N

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. 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 the following:

- Minimum of 120 credit hours.
- Minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken toward the major.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken toward a minor.
- Completion of ENGL 110C, ENGL 211C or ENGL 231C, and the writing intensive (W) course in the major with a grade of C or better. The W course must be taken at Old Dominion University.
- Completion of Senior Assessment.

Oceanography Major

General Education

Complete lower-division requirements 36-42
Complete upper-division requirements (minimum of 6 credit hours) 6

Oceanography

- BIOL 121N General Biology I 4
- & BIOL 122N General Biology I Lab 4
- BIOL 123N General Biology II 4
- & BIOL 124N General Biology II Lab 4
- MATH 212 Calculus II 4
- OEAS 111N Physical Geology 4
- OEAS 130G Research Skills and Information Literacy for the Natural Sciences 3
- OEAS 220T Introduction to Meteorology 3
- OEAS 306 Oceanography 3
- OEAS 307 Research Experience in Oceanography 3
- PHYS 231N University Physics I 8
- & PHYS 232N University Physics II 8
- OEAS 310 Global Earth Systems 4
- STAT 310 Introductory Data Analysis 3
- OEAS 406 Matlab 1
- OEAS 451W Data Collection and Analysis in Oceanography 4

Select two of the following Oceanography core courses: 6-7

- OEAS 405 Physical Oceanography
- OEAS 410 Chemical Oceanography
- OEAS 425 Marine Geology
- OEAS 440 Biological Oceanography

Upper-division electives outside Ocean and Earth Sciences

Students must take 9 credits at the 300-400 level in a science, math, or engineering discipline outside of the OES department (i.e., Chemistry, Biology, Physics, Engineering, Math, Geography, Computer Science). Select 200-level courses can be accepted with prior approval of the Chief Departmental Advisor.

Upper-division electives within Ocean and Earth Science

1 Ocean and Earth Science with a Major in Oceanography (BS)
Students must take 9 or more credits at the 300-400 level in the OES department (excluding OEAS 302 and OEAS 468W). These can include any of the oceanography core courses (if not already taken as an elective above). Students interested in graduate school should strongly consider independent research (OEAS 487 or OEAS 497), and should consult with their academic advisor for additional information.

**Total Credit Hours** 114-121

**Elective Credit**

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

### Honors Program in Ocean and Earth Science

Students admitted by the faculty to the Ocean and Earth science honors program engage in supervised individual study in areas of their interest. Honors students must complete all courses required by the department with a minimum grade point average of 3.50 and a total of at least three credits in one of the following courses:

- OEAS 487 Honors Research in Ocean and Earth Sciences 1-3
- OEAS 497 Special Problems and Research 1-3

### Degree Program Guide

The Degree Program Guide is a suggested curriculum to complete this degree program in four years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td><strong>Freshman</strong></td>
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<tr>
<td><strong>Fall</strong></td>
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<tr>
<td>ENGL 110C</td>
<td>English Composition (C or better required)</td>
<td>3</td>
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<tr>
<td>BIOL 121N and BIOL 122N</td>
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<tr>
<td>OEAS 111N</td>
<td>Physical Geology</td>
<td>4</td>
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<tr>
<td>Literature</td>
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<tr>
<td>Elective or Language &amp; Culture I (if required)</td>
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<tr>
<td><strong>Credit Hours</strong></td>
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<tr>
<td><strong>Spring</strong></td>
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<td>BIOL 123N and BIOL 124N</td>
<td>4</td>
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<tr>
<td>ENGL 211C or ENGL 231C</td>
<td>Writing, Rhetoric, and Research (C or better required) or Writing, Rhetoric, and Research. Special Topics</td>
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<tr>
<td>MATH 211</td>
<td>Calculus I</td>
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<tr>
<td>Elective or Language &amp; Culture II (if required)</td>
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<td><strong>Credit Hours</strong></td>
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<td><strong>Sophomore</strong></td>
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<td><strong>Fall</strong></td>
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<td>CHEM 121N and CHEM 122N</td>
<td>4</td>
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<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
<td>4</td>
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<tr>
<td>MATH 212</td>
<td>Calculus II</td>
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<tr>
<td>OEAS 130G (Meets Information Literacy and Research)</td>
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<td><strong>Credit Hours</strong></td>
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<tr>
<td><strong>Spring</strong></td>
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<tr>
<td>CHEM 123N and CHEM 124N</td>
<td>4</td>
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### BA or BS to MBA (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 discrete credit hours for the undergraduate degree and 30 discrete credit hours for the graduate degree). Early-entry program students should carefully consider their undergraduate degree program requirements when planning their course plan.
of study. Students in the early-entry program work in close consultation with the MBA Program Office and should refer to information in the Strome College of Business section in the graduate catalog (http://catalog.odu.edu/graduate/stromecollegeofbusiness/) to develop an individualized plan of study based on the required coursework.

**BA or BS to MPA (Master of Public Administration) Linked Program**

The linked BA/MPA or BS/MPA 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 MPA 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 MPA program, taking MPA courses until completing the required 39 credit hours. Students in the linked program 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).

Requirements for admission to the graduate program can be found in the School of Public Service section of the Graduate Catalog (http://catalog.odu.edu/graduate/business/public-service/). For additional information, please contact the School of Public Service in the Strome College of Business.