OLD DOMINION UNIVERSITY 2004-2006 Catalog
Bachelor of Science—Ocean and Earth Science Major

Students earning the AS, AA, or AA&S (or university parallel) degree from a Virginia Community College automatically satisfy the lower division general education requirements. Courses marked with * require a grade of C or better to transfer, even with the AS degree. The remaining lower division courses are automatically satisfied by the AS (including foreign language), regardless of the grade earned. Additionally, courses in which a grade of NC–A or below were earned will not transfer. Therefore Community College degree holders may require additional credits to meet the 120 credit hour graduation minimum. (AS=Associate degree)

### LOWER DIVISION GENERAL EDUCATION (required of all emphasis areas)

#### A. Skills

<table>
<thead>
<tr>
<th>Area</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>ENGL 110C</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENGL 111C, 131C, PHIL 111C or HIST 111C</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communication</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>(Satisfied by OCE 442)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>(Requires 162M or higher)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign Language Skills</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>(Competence must be at the 102 level)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### B. Perspectives

**Fine and Performing Arts**

- ARTH 121A, ARTS 122A, MUSC 264A, DANC 185A, THEA 241A

**History**

- HIST 101H, 102H, 103H, 104H, or 105H

**Literature**

- ENGL 112L, 144L, or FLET 100L

**Philosophy**

- PHIL 110P, 120P, or 150P

**Natural Science and Technology**

- CHEM 115N-116N required

**Technology Requirement**

- Met in the major

**Social Sciences**

- ANTR 110S; COMM 200S; CRJS 215S; ECON 200S, 201S, 202S; GEOG 100S, 101S; POLS 100S, 101S; PSYC 201S, 203S; SOC 201S; WMST 201S

### Students must select one of the following options:

#### Course Requirements-Biological Oceanography Emphasis

- BIOL 115N General Biology 1
- BIOL 116N General Biology 2
- CHEM 115N-116N College Chemistry
- Elective (from GEOL 410, OCEN 404, 410, 412, 414, STAT 310W)
- OCEN 440 Biological Oceanography Lec/Lab
- BIOL 203 Evolution
- BIOL 415 Marine Ecology
- CHEM 311, 312, 313 Organic Chemistry Lec/Lab
- CHEM 445 Biochemistry
- Elective (from GEOL 420, OCEN 404, 410, 412, 414, STAT 310W)
- OCEN 310 Global Earth Systems
- OCEN 403W Aquatic Pollution
- OCEN 441-442 Ocean and Earth Science Field Study

#### Course Requirements—Chemical Oceanography Emphasis

- BIOL 115N General Biology 1
- BIOL 116N General Biology 2
- CHEM 115N-116N College Chemistry
- Elective (from GEOL 410, OCEN 404, 410, 412, 414, STAT 310W)
- OCEN 310 Global Earth Systems
- OCEN 403W Aquatic Pollution
- OCEN 410 Chemical Oceanography Lecture/Lab
- CHEM 311/313 Organic Chemistry Lecture
- CHEM 331/333 Physical Chemistry Lecture
- CHEM 332 Experimental Physical Chemistry

### Course Requirements—Physical Oceanography Emphasis

- BIOL 115N General Biology 1
- BIOL 116N General Biology 2
- CHEM 115N-116N College Chemistry
- Elective (from GEOL 410, OCEN 404, 410, 412, 414, STAT 310W)
- OCEN 310 Global Earth Systems
- OCEN 403W Aquatic Pollution
- OCEN 410 Chemical Oceanography Lecture/Lab
- BIOL 203 Evolution
- BIOL 415 Marine Ecology
- CHEM 311, 312, 313 Organic Chemistry Lec/Lab
- CHEM 445 Biochemistry
- Elective (from GEOL 420, OCEN 404, 410, 412, 414, STAT 310W)
- OCEN 310 Global Earth Systems
- OCEN 403W Aquatic Pollution
- Occen 441-442 Ocean and Earth Science Field Study

Students in the Biological subdiscipline are strongly encouraged to complete a minor in Biology. The following courses are required:

- BIOL 316 General Ecology
- BIOL 331 Marine Biology
- BIOL 442 Marine Ecology Lab
- BIOL Elective (cannot include BIOL 313 or 317)

Students in the Chemical subdiscipline are strongly encouraged to complete a minor in Chemistry. The following courses are required:

- CHEM 311-313 Organic Chemistry Lecture
- CHEM 331/333 Physical Chemistry Lecture
- CHEM 332 Experimental Physical Chemistry

Or 452 Inorganic Chemistry Laboratory

Students in the Physical subdiscipline are strongly encouraged to complete a minor in Chemistry. The following courses are required:
Continuance. Recommended that students take the PRAXIS I exam prior to, or courses on developing instructional strategies is required. It is exam prior to enrollment in any education practicum course or professional education core. Additionally, passage of the PRAXIS I overall, with no grade less than C- in the content area and the program must have 2.75 grade point average in the major and complete a minor in applied mathematics. The following courses are required:

MATH 312 Calculus III 3
MATH 316 Intro Linear Algebra 3
MATH 317 Calculus IV 3
MATH 401 Partial Differential Equations 3

Course Requirements—Geology Emphasis

BIOL 115N General Biology I 4*
BIOL 116N General Biology 2 or
GEOL 303 Palenotology 3-4*
CHEM 115N-116N College Chemistry 8
(satisfies natural science perspective)
CS 149D Elements of Computer Science 3
(satisfies computer skills requirement)

GEOL 111N-112N Physical Geology/Historical Geology 8
MATH 205-206 Intro Calculus I and II 6*
PHYS 231N-32N University Physics I and II 8
STAT 330 Intro to Probability and Statistics 3

Course Requirements—Earth Science Education Emphasis

Admission. Students wanting to enroll in the teacher education program must have 2.75 grade point average in the major and overall, with no grade less than C- in the content area and the professional education core. Additionally, passage of the PRAXIS I exam prior to enrollment in any education practicum course or courses on developing instructional strategies is required. It is recommended that students take the PRAXIS I exam prior to, or during enrollment in ECI 301.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- for continuance in the College of Education.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C- in the major, minor, and professional education core; and completion of a minimum of 127 credit hours. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education website or the Office of Teacher Education Services, Education Building room 152. The curriculum is as follows:

BIOL 115N General Biology I 4*
CHEM 115N-116N College Chemistry 8*

(satisfies natural science perspective)

GEOL 111N-112N Physical Geology/Historical Geology 8*
MATH 163 Pre-calculus II 3*
PHYS 111N-112N Intro General Physics I and II 8*
OCEN 306 Oceanography 3
OCEN 310 Global Earth Systems 3
GEOL 303 Paleontology 3
GEOL 313 Mineralogy 3
GEOL 314 Petrology 3
GEOL 344W Geomorphology 3

GEOL 360 Environmental Systems Education

(satisfies oral communication requirement) 3

GEOL 442 General Meteorology 3
PHYS 408 Astronomy for Teachers 3

OCEN 441-442 Ocean and Earth Science Field Study 6

(OCEN 442 satisfies oral communication requirement)

Professional Education Courses

ECI 301 Social Cultural Foundations of Education 3
ECI 304 Education Applications of Computers
(Satisfies computer skills requirement)

ECI 360 Classroom Management and Discipline 2
ECI 408 Reading and Writing in Content Areas 3
ECI 454 Developing Instructional Strategies 4
ECI 485 Student Teaching 12
ECI 406 Special Needs Children-General Ed 3
ECI 413 Fundamentals-Human Growth and Development 3

UPPER DIVISION GENERAL EDUCATION

(Teacher Education Core satisfies this requirement.)

Option A. Approved Minor, 12-24 hours; also second degree or second major. Students completing an oceanography emphasis should see the information in the emphasis areas encouraging them to complete specific minor requirements.

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

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, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.