

OLD DOMINION UNIVERSITY 2006-2008 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 C- 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

Written Communication

ENGL 110C _____ 3 _____
 ENGL 111C or 131C _____ 3 _____

Oral Communication _____ 3 _____

(Satisfied by OEAS 442)

Mathematics _____ 4 _____ *

(Requires MATH 211)

Foreign Language Skills _____ 3 _____

(Competence must be at the 102 level)

Computer Skills _____ 3 _____ *

(Requires CS 149D or higher; satisfied by ECI 304 in Earth Science Education track)

B. Perspectives

Fine and Performing Arts _____ 3 _____

ARTH 121A, ARTS 122A, MUSC 264A, DANC 185A, THEA 241A, COMM/THEA 270A or GEN 101

History _____ 3 _____

HIST 101H, 102H, 103H, 104H, _____ 3 _____
 or 105H

Literature _____ 3 _____

ENGL 112L, 144L, or FLET 100L or GEN 101

Philosophy _____ 3 _____

PHIL 110P, 120P, or 150P or GEN 101

Natural Science and Technology

(CHEM 115N-116N required) _____ 4 _____ *

_____ 4 _____ *

Technology Requirement _____ 3-4 _____

(Met in the major)

Social Sciences _____ 3 _____

(GEN 101 may be used) _____ 3 _____
 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 _____ 4*
 BIOL 116N General Biology 2 _____ 4*
 CHEM 115N-116N College Chemistry _____ 8*
 (satisfies natural science perspective)
 CS 149D Elements of Computer Science _____ 3*
 (satisfies computer skills requirement)
 OEAS 111N Physical Geology _____ 4*
 MATH 211-212 Calculus I and II _____ 8*
 OEAS 306 Oceanography _____ 3
 PHYS 231N-232N University Physics I and II _____ 8*
 STAT 330 Intro to Probability and Statistics or
 STAT 310W Intro to Data Analysis _____ 3
 OEAS 310 Global Earth Systems _____ 3
 OEAS 403W Aquatic Pollution _____ 3

OEAS 440 Biological Oceanography Lec/Lab _____ 4
 BIOL 292 Evolution _____ 3
 BIOL 415 Marine Ecology _____ 3
 CHEM 311, 312, 313 Organic Chemistry Lec/Lab _____ 8
 CHEM 445 Biochemistry _____ 3
 Elective (from OEAS 420, 404, 410, 412, 414, STAT 310W) _____ 3

OEAS 441-442 Ocean and Earth Science Field Study _____ 6
 (OEAS 442 satisfies oral communication requirement)

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

BIOL 316 General Ecology _____ 3
 BIOL 331 Marine Biology _____ 3
 BIOL 442 Marine Ecology Lab _____ 2
 BIOL Elective (cannot include BIOL 313 or 317) _____ 2

Course Requirements-Chemical Oceanography Emphasis

BIOL 115N General Biology 1 _____ 4*
 BIOL 116N General Biology 2 _____ 4*
 CHEM 115N-116N College Chemistry _____ 8*
 (satisfies natural science perspective)
 CS 149D Elements of Computer Science _____ 3*
 (satisfies computer skills requirement)
 OEAS 111N Physical Geology _____ 4*
 MATH 211-212 Calculus I and II _____ 8*
 OEAS 306 Oceanography _____ 3
 PHYS 231N-32N University Physics I and II _____ 8*
 STAT 330 Intro to Probability and Statistics _____ 3
 OEAS 310 Global Earth Systems _____ 3
 OEAS 403W Aquatic Pollution _____ 3
 OEAS 410 Chemical Oceanography Lecture/Lab _____ 4
 CHEM 311/313 Organic Chemistry Lecture _____ 6
 CHEM 331/333 Physical Chemistry Lecture _____ 6
 CHEM 332 Experimental Physical Chemistry _____ 2
 Or 452 Inorganic Chemistry Laboratory _____ 2
 CHEM 451 Advanced Inorganic Chemistry _____ 3
 Elective (from OEAS 414, 412, 418) _____ 3
 OEAS 441-442 Ocean and Earth Science Field Study _____ 6
 (OEAS 442 satisfies oral communication requirement)

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 _____ 6
 CHEM 312-314 Organic Chemistry Laboratory _____ 4
 CHEM 321 Analytical Chemistry Lecture _____ 3
 CHEM 322 Analytical Chemistry Laboratory _____ 2

Course Requirements-Physical Oceanography Emphasis

BIOL 115N General Biology 1 _____ 4*
 BIOL 116N General Biology 2 _____ 4*
 CHEM 115N-116N College Chemistry _____ 8*
 (satisfies natural science perspective)
 CS 149D Elements of Computer Science _____ 3*
 (satisfies computer skills requirement)
 OEAS 111N Physical Geology _____ 4*
 MATH 211-212 Calculus I and II _____ 8*
 PHYS 231N-32N University Physics I and II _____ 8*
 STAT 310W Intro to Data Analysis or
 STAT 330 Intro to Probability and Statistics _____ 3

OEAS 306 Oceanography	_____	3
OEAS 310 Global Earth Systems	_____	3
OEAS 405 Physical Oceanography	_____	3
OEAS 415 Waves and Tides	_____	3
OEAS 451W Data Collection /Analysis in Oceanography	_____	3
OEAS 452 Geophysical Fluid Dynamics	_____	3
MATH 307 (MATH 280-does not meet minor requirements)		
Ordinary Differential Equations	_____	3
ME 303 Mechanics of Fluids	_____	3
ME 311 Thermodynamics	_____	3
PHYS 319 Analytical Mechanics	_____	3
STAT 437 Regression and Analysis of Variance	_____	3
OEAS 441-442 Ocean and Earth Science Field Study	_____	6
(OEAS 442 satisfies oral communication requirement)		

Students in the physical subdiscipline are strongly encouraged to 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 1	_____	4*
BIOL 116N General Biology 2 or		
OEAS 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)		
OEAS 111N-112N Physical Geology/Historical Geology	_____	8
MATH 211-212 Calculus I and II	_____	8
PHYS 231N-232N University Physics I and II	_____	8
STAT 330 Intro to Probability and Statistics	_____	3
Or STAT 310W Intro Data Analysis	_____	3
OEAS 306 Oceanography	_____	3
OEAS 310 Global Earth Systems	_____	3
OEAS 313 Mineralogy	_____	3
OEAS 314 Petrology	_____	4
OEAS 344W Geomorphology	_____	3
OEAS 320 Sedimentology/Stratigraphy	_____	4
OEAS 411 Structural Geology	_____	4
OEAS 420 Hydrogeology OR		
OEAS 434 Intro to Geophysical Methods	_____	3
One elective chosen from OEAS 303,		
340, 368, 408, 414, 420, 434, 435, 446, 450;		
OEAS 403, 412, 414, 415, 419, 436	_____	3
OEAS 441-442 Ocean and Earth Science Field Study	_____	6
(OEAS 442 satisfies oral communication requirement)		

Course Requirements-Earth Science Education Emphasis

Admission. Students applying for admission to the teacher education programs must (1) complete at least one semester at Old Dominion University, (2) have a 2.75 grade point average overall, in the major, and in the professional education core with no grade less than C- in all courses taken in the major and in the professional education core, (3) have passed PRAXIS I or achieved State Board of Education approved scores on the SAT or ACT, (4) present written recommendations from two faculty members from the Occupational and Technical Studies Department, and (5) have an interview with the program leader. Although students may enroll in a limited number of education courses, admission into the teacher education program and passing PRAXIS I scores or approved equivalent test scores must be on file in the Teacher Education Services Office prior to students enrolling in any professional

education practicum course.

Continuance. Student in education licensure programs must (1) satisfy University requirements, (2) continue to maintain a 2.75 grade point average overall, in the major, and in the professional education core with no earned grade less than C- in all courses taken in the major and in the professional education core, and (3) successfully complete a student teaching interview.

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 who complete their programs after December 1, 2006 are required to take the Virginia Communication and Literacy Assessment (VCLA) to be eligible for licensure. The VCLA should be taken during the semester of student teaching. It is recommended that the VCLA be taken after students have completed their English and reading course requirements. In addition, all students must take and pass the Exit Examination of Writing Proficiency to be eligible for student teaching. The University recommends that students take this exam in their junior year. All students will take and attain a passing score on the PRAXIS II Earth Science Content Examination specialty test in order to be eligible for student teaching. Score reports of all examinations must be on file in the Teacher Education Services Office in room 152 of the Education Building.

Graduation. Students in education licensure programs must have (1) a 2.75 grade point average overall, in the major, and in the professional education core, (2) earned a passing grade in student teaching, and (3) pass the Exit Examination of Writing Proficiency and (4) complete the senior assessment.

NOTE: Due to changing University requirements, national accreditation standards, and Commonwealth licensure regulations, the programs in the Darden College of Education are under constant revision. Any changes resulting from these factors supersede the program requirements described here or in the University catalog. Students should obtain current program information from their academic advisor and the Darden College of Education website at <http://www.education.odu.edu>.

The curriculum is as follows:

BIOL 115N General Biology 1	_____	4*
CHEM 115N-116N College Chemistry	_____	8*
(satisfies natural science perspective)		
OEAS 111N-112N Physical Geology/Historical Geology	_____	8*
MATH 211 Calculus	_____	4*
STAT 310W Intro to Data Analysis or		
STAT 330 Intro to Probability and Statistics	_____	3
PHYS 111N-112N Intro General Physics I and II	_____	8*
OEAS 306 Oceanography	_____	3
OEAS 310 Global Earth Systems	_____	3
OEAS 303 Paleontology	_____	3
OEAS 313 Mineralogy	_____	3
OEAS 314 Petrology	_____	4
OEAS 344W Geomorphology	_____	3
OEAS 360 Environmental Systems Education		
(satisfies oral communication requirement)	_____	3
OEAS 443 General Meteorology	_____	3
PHYS 408 Astronomy for Teachers	_____	3
OEAS 441-442 Ocean and Earth Science Field Study	_____	6
(OEAS 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)	_____	3
ECI 406 Students with Diverse Learning	_____	3

ECI 413 Fundamentals-Human Growth and Development	_____ 3
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

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.