EARTH AND ENVIRONMENTAL SCIENCES

Earth & Environmental Sciences Program

There are ***three*** **possible paths** to the bachelor's degree in Earth & Environmental Sciences: a Bachelor of Science in anticipation of advanced study in Earth Science or a Bachelor of Science in anticipation of advanced study in Environmental Science, or a Bachelor of Arts in Earth Science for those who seek a less specialized course of study. Earning a B.A. degree does not preclude a professional career in Earth Science, although admission to some graduate programs may require completion of additional science and mathematics courses.

DEGREE REQUIREMENTS BELOW:

Bachelor of Arts in Earth Science

Students are required to take 10 four-credit courses and 1 one-credit course.

Code	Title
(a) Students must take one (1) Introductory Course:	
100-Level EESC Course	
(b) Students must take the following three (3) EESC Foundation Courses:	
EESC 200	Environmental Geology
EESC 210	Historical Geology
EESC 211	Rocks, Minerals & Soils
(c) Students must take at least three (3) of the following Earth Science Core Electives:	
EESC 300	Geomorphology
EESC 308	Biodiversity Through Time
EESC 311	Structural Geology
EESC 312	Petrology and Volcanology
EESC 314	Sedimentology & Stratigraphy
(d) Students must take three (3) additional Earth Science Electives (200-level or above). One Earth Science elective can be replaced by a natural science cognate course (see section 2e).	
(e) Students must take EESC 380: Senior Seminar (1 credit) in their senior year. This course is open to all sophomore, junior and senior EESC students.	
EESC 380	Earth & Environmental Sciences Senior Seminar

Bachelor of Science in Earth Science

Students are required to take 14 four-credit courses, 1 one-credit course and a Field Course.

Code	Title
(a) Students must take one (1) Introductory Course:	
100-Level EESC Course	
(b) Students must take the following three (3) EESC Foundation Courses:	
EESC 200	Environmental Geology
EESC 210	Historical Geology
EESC 211	Rocks, Minerals & Soils
(c) Students must take at least three (3) of the following Earth Science Core Electives:	
EESC 300	Geomorphology
EESC 308	Biodiversity Through Time
EESC 311	Structural Geology
EESC 312	Petrology and Volcanology
EESC 314	Sedimentology & Stratigraphy
(d) Students must take three (3) additional Earth Science Electives (200-level or above).	
(e) Students must take four (4) Natural Science Cognate Courses:	
BIOL 210	Molecular Biology and Unicellular Life
BIOL 220	Multicellular Life
BIOL 230	Ecology and Evolution
CHEM 131	Atoms and Molecules: Structure and Dynamics
CHEM 132	Organic Structure and Reactivity
CS 111	Discovering Computer Science: Scientific Data and Dynamics
or DA 101	Introduction to Data Analytics
MATH 135	Single Variable Calculus
MATH 145	Multivariable Calculus
MATH 220	Applied Statistics
PHYS 121	General Physics I
PHYS 122	General Physics II
(f) Students must take EESC 380: Senior Seminar (1 credit) in their senior year. This course is open to all sophomore, junior and senior EESC students.	
EESC 380	Earth & Environmental Sciences Senior Seminar
(g) Students must take a Field Course also known as "Field Camp". This is a four to six credit course taught at other institutions, generally during the summer.	
EESC 400	Field Course

Bachelor of Science in Environmental Science

Students are required to take 14 four-credit courses and 1 one-credit course.

Code	Title
(a) Students must take one (1) Introductory Course:	
100-Level EESC Course	
(b) Students must take the following three (3) EESC Foundation Courses:	
EESC 200	Environmental Geology
EESC 210	Historical Geology
EESC 211	Rocks, Minerals & Soils
(c) Students must take the two (2) Environmental Science Core Courses:	
BIOL 230	Ecology and Evolution
CHEM 131	Atoms and Molecules: Structure and Dynamics
(d) Students must take three (3) of the following Environmental Science Core Electives:	
EESC 234	Applied GIS for Earth and Environmental Sciences
or SES 222 & SES 223	Geographic Information Systems I and Geographic Information Systems II

EESC 240	Earth Resources
EESC 270	Oceanography
EESC 300	Geomorphology
EESC 310	Global Biogeochemical Cycles
EESC 313	Environmental Hydrology
EESC 314	Sedimentology & Stratigraphy
EESC 333	Stable Isotopes in the Environment

(e) Students must complete a five (5) course Environmental Science Concentration (ESC). Developed in consultation with a member of the EESC faculty or a departmentally approved affiliate, the ESC must include four (4) Environmental Science Electives and one (1) Human Environment Elective selected from the approved list (see below). One semester of Senior Research may be substituted for a single science elective. The ESC must be approved by the EESC faculty no later than the end of the sophomore year.

Environmental Science Electives	
BIOL 210	Molecular Biology and Unicellular Life
BIOL 220	Multicellular Life
BIOL 321	Plant Ecology
CHEM 132	Organic Structure and Reactivity
CHEM 331	Intermediate Analytical Chemistry
CS 111	Discovering Computer Science: Scientific Data and Dynamics
or DA 101	Introduction to Data Analytics
SES 215	Renewable Energy Systems
SES 310	Wetland Ecology
SES 274	Ecosystem Management
SES 310	Wetland Ecology
MATH 220	Applied Statistics
Human Environment Electives	
ECON 202	Microecon Analysis Lec
PHIL 210	Philosophy of Science
PHIL 260	Environmental Philosophy
SES 240	Environmental Politics and Decision-Making
SES 334	Sustainable Agriculture and Food Systems
SES 264	Environmental Planning and Design
SES 274	Ecosystem Management
(f) Students must take a Senior Seminar (1 credit) in their senior year. This course is open to all sophomore, junior and senior EESC students.	
EESC 380	Earth & Environmental Sciences Senior Seminar
(g) Environmental Field Camp is recommended but not required.	

Students who want to pursue graduate study in the Earth & Environmental Sciences are strongly encouraged to take additional math and science courses beyond this minimum requirement.

Both B.S. and B.A. students are required to pass a comprehensive exam, administered early in the second semester of the senior year.

Note that most upper level EESC courses are offered in alternate years. Therefore careful schedule planning is important, especially if one pursues a semester of off-campus study.

Minor in Earth & Environmental Sciences

(6 four-credit courses)

Code	Title
(a) Students must take one (1) Introductory Course:	
100-Level EESC Course	
(b) Students must take the following three (3) EESC Foundation Courses:	
EESC 200	Environmental Geology
EESC 210	Historical Geology
EESC 211	Rocks, Minerals & Soils
(c) Students must take two (2) Additional EESC courses at the 200-level or above.	

Additional Points of Interest

Earth & Environmental Sciences has a long tradition of field trips during the fall and spring semester. Recent trips include Hawaii, coastal Maine, Arizona & Utah, the Bahamas, Death Valley, the Great Smoky Mountains and the Adirondacks.

Abundant student research opportunities are available, including working with faculty in the field or laboratory. Student employment opportunities within the department include working as teaching and laboratory assistants, and assisting in developing and maintaining departmental collections.

The C.L. Herrick Geological Society is an active, student-run organization, which coordinates guest lectures and social events throughout the academic year.