

# ENVIRONMENTAL STUDIES - BACHELOR OF ARTS (BA)

The Environmental Studies Program (ENVS) is an interdisciplinary program that combines and integrates different types of knowledge to address the complex environmental, resource, and sustainability challenges in coupled human environment systems. This is accomplished by addressing the grand challenges related to sustaining the planet and its people. How do we meet the needs of a growing human population while sustaining our life support systems—climate, air and water systems, natural resources, species assemblages, and ecosystems on land and in the oceans? How do we increase the well-being of those at risk of global environmental change in an unequal world while not compromising future generations? Our research expertise include food systems; dimensions of global change; conservation biology, restoration ecology; ecosystem biogeochemistry; environmental governance, science and policy interactions; environmental inequality, and climate justice; environmental ethics; sustainable livelihoods; and behavioral dimensions of climate change mitigation and adaptation.

Undergraduate students acquire an awareness of the complexity of factors relating to human interaction with the environment. They become acutely aware that environmental problems have both human and biophysical components, and gain knowledge of the general principles of human-environmental interactions, global habitability, environmental change and sustainable societies. The ENVS majors includes introductory coursework in natural sciences, economics and mathematics; intermediate coursework in policy, ethics, economics and writing; and advanced coursework offered by several departments and programs across CU Boulder.

## Requirements

Students must complete:

- The general requirements of the College of Arts and Sciences.
- Foundational courses in sciences, policy, ethics, economics, writing and math.
- 12 credit hours of upper-division coursework to specialize in an area of interest.
- An internship or field course.
- A cornerstone course.
- A capstone course.

## Required Courses and Credits

Code	Title	Credit Hours
<b>Introductory Sequence in Environmental Studies</b>		
ENVS 1000	Introduction to Environmental Studies	4
ENVS 1001	Introduction to Human Dimensions of Environmental Studies	4
<b>Introductory Sequence in Biology or Earth Science</b>		
Choose one sequence from the following:		7-8
EBIO 1210 & EBIO 1230 & EBIO 1220 & EBIO 1240	General Biology 1 and General Biology Laboratory 1 and General Biology 2 and General Biology Laboratory 2	

ATOC 1050 & ATOC 1070 & ATOC 1060	Weather and the Atmosphere and Weather and the Atmosphere Laboratory and Our Changing Environment: El Nino, Ozone, and Climate
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GEOG 1001 & GEOG 1011	Environmental Systems: Climate and Vegetation and Environmental Systems: Landscapes and Water
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GEOL 1010 & GEOL 1030 & GEOL 1020	Exploring Earth and Introduction to Geology Laboratory 1 and Dodos, Dinosaurs, and Deinococcus: The History of a Habitable Planet (or GEOL 1040 or GEOL 1060)
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GEOL 1012 & GEOL 1030 & GEOL 1040	Exploring Earth for Scientists and Introduction to Geology Laboratory 1 and Geology of Colorado (or GEOL 1060)
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GEOL 1012 & GEOL 2001	Exploring Earth for Scientists and Planet Earth (or GEOL 2005)
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### Introductory Course in Chemistry or Physics

Choose one course (and the lab, if required) from the following: 3-5

CHEM 1011	Environmental Chemistry 1
CHEM 1113 & CHEM 1114	General Chemistry 1 and Laboratory in General Chemistry 1
PHYS 1110	General Physics 1 (calculus based)
PHYS 2010	General Physics 1 (algebra based)

### Intermediate Natural Science Requirement

Choose one course (and the lab, if required) from the following: 3-4

ENVS 2000	Applied Ecology for Environmental Studies
ENVS/CVEN 3434	Introduction to Applied Ecology
ENVS/ATOC 3600/ GEOG 3601	Principles of Climate
EBIO 2040	Principles of Ecology
GEOG 3511	Introduction to Hydrology
GEOL 2001	Planet Earth
GEOL 2005	Introduction to Earth Materials

### Intermediate Policy Requirement

Choose one course from the following: 3

PSCI 2106	Introduction to Public Policy Analysis
PSCI 2116	Introduction to Environmental Policy and Policy Analysis
PSCI 3206	The Environment and Public Policy

### Intermediate Social Science Requirement

Choose one course from the following: 3-4

ENVS/GEOG 3022	Climate Politics and Policy
ENVS 3030	Topics in Environmental Social Sciences
ENVS 3031	Environmental Psychology
ENVS 3032	Environment, Media and Society
ENVS 3033	Governing the Environment

### Economics Requirements

ECON 2010	Principles of Microeconomics	4
ECON 3535 or ECON 3545	Natural Resource Economics Environmental Economics	3

### Ethics Requirement

Choose one course from the following: 3

ENVS/PHIL 3140	Environmental Ethics
ENVS/PSCI 3064	Environmental Political Theory

#### Statistics/Calculus Requirement

Choose one course from the following (not all courses fulfill the Gen. Ed. QRMS requirement): 3-5

EBIO 1010	Introduction to Statistics and Quantitative Thinking for Biologists
EBIO 4410	Biological Statistics
GEOG/GEOL 3023	Statistics and Geographic Data
MATH 2510	Introduction to Statistics
PSCI 2075	Quantitative Research Methods
PSYC 2111	Psychological Science I: Statistics
SOCY 2061	Introduction to Social Statistics
MATH 1300	Calculus 1
MATH 1310	Calculus for Life Sciences
APPM 1350	Calculus 1 for Engineers

#### Writing Requirement

ENVS 3020 Advanced Writing in Environmental Studies 3

#### Application Requirement (An Internship or Field Course)

Choose one course from the following: 2-6

ENVS 2100	Topics in Applied Environmental Studies
ENVS 3001	Sustainable Solutions Consulting
ENVS 3100	Topics in Applied Environmental Studies
ENVS 3103	Applied Environmental Studies: Mining in Four Corners
ENVS 3173/ THTR 4173/ ATLS 3173	Creative Climate Communication
ENVS/IAFS 3640	Data Analysis for Global Environmental Affairs
ENVS 3930	Internship
ENVS 4050	Field Methods in Ecosystem Science
ENVS/EBIO 4340	Conservation Biology and Practice in Brazil's Atlantic Forest
ENVS/MUSM 4795	Field Methods in Zoology and Botany
ARTS 4444	Art and Rural Environments Field School
CVEN 3434	Introduction to Applied Ecology
EBIO 4090	Coral Reef Ecology
EBIO 4100	Advanced Ecology
EDUC 4833	Teaching and Learning Earth Systems
EVEN 4100	Environmental Sampling and Analysis
GEOL 2700	Introduction to Field Geology

#### Cornerstone Requirement

Choose one course from the following: 3

ENVS/GEOL 3520	Energy and Climate Change: An Interdisciplinary Approach
ENVS 3525	Intermediate Environmental Problem Analysis: Topical Cornerstones
ENVS 3621	Energy Policy and Society

#### Capstone Requirement

Choose one course from the following: 3

ENVS 3800	The Art of Research: The Essential Elements of Research in Environmental Studies
ENVS 4800	Capstone: Critical Thinking in Environmental Studies
ENVS 4990	Senior Thesis
ENST 4150	Energy Policy Project

#### Specialization Requirement

Complete a minimum of 12 credits. Upper-division courses that fulfill the Intermediate Natural Science, Intermediate Social Science, Policy, Application, Cornerstone and Capstone requirements may apply toward the specialization requirement if those areas are already fulfilled with another course. No course may apply to two areas in the ENVS major. 12

Total Credit Hours 63-74

Approved courses that fulfill the major requirements are listed on the program's Curriculum (<http://www.colorado.edu/envs/undergraduate-students/curriculum/>) webpage. To explore suggested focus areas and learn how to select courses that align with specific interests, visit the ENVS Guidance Documents (<http://www.colorado.edu/envs/undergraduate-students/curriculum/guidance-documents/>) webpage.

## Four-Year Plan of Study

Through the required coursework for the major, students will complete all 12 credits of both the Social Sciences and the Natural Sciences, including the lab, areas of the Gen Ed Distribution Requirement as well 3 credits of the Arts and Humanities part of this requirement and the QRMS component of the Gen Ed Skills Requirement.

Course	Title	Credit Hours
<b>Year One</b>		
<b>Fall Semester</b>		
ENVS 1000	Introduction to Environmental Studies (partially fulfills Gen. Ed. Distribution: Natural Sciences)	4
ENVS 1150	First-Year Writing in Energy, Environment and Sustainability (fulfills Gen. Ed. Skills course: Lower-division Written Communication)	3
One mathematics course in preparation for statistics or calculus. (may fulfill Gen. Ed. Skills: QRMS)		3-4
Elective or MAPS		3
Elective or MAPS		3
Credit Hours		16-17
<b>Spring Semester</b>		
ENVS 1001	Introduction to Human Dimensions of Environmental Studies	4
Statistics/Calculus requirement (may fulfill Gen. Ed. Skills: QRMS)		3-5
Elective or MAPS		3
Elective or MAPS		3
Credit Hours		13-15

**Year Two**

**Fall Semester**

Introductory biology or earth science, with Lab - first course - partially fulfills Gen. Ed. Distribution: Natural Sciences and Gen. Ed. Distribution: Natural Sciences with Lab	3-4
Intermediate Policy requirement - may partially fulfill Gen. Ed. Distribution: Social Sciences	3
Gen. Ed. Distribution/Diversity course (example: Arts & Humanities/Global Perspective)	3
Elective	3
Elective	3
<b>Credit Hours</b>	<b>15-16</b>

**Spring Semester**

Introductory biology or earth science - second course	3-4
ECON 2010 Principles of Microeconomics (Economics requirement - first course - partially fulfills Gen. Ed. Distribution: Social Sciences)	4
Introductory course in chemistry or physics, and lab if required - may partially fulfill Gen. Ed. Distribution: Natural Sciences	3-5
Elective(s) or Upper-division Elective(s) (if needed)	6-3
<b>Credit Hours</b>	<b>16</b>

**Year Three**

**Fall Semester**

Intermediate natural science requirement	3-4
ENVS 3020 Advanced Writing in Environmental Studies (ENVS Writing requirement - fulfills Gen. Ed. Skills: Upper-division written communication)	3
ECON 3535 or ECON 3545 Natural Resource Economics (ENVS Economics requirement - second course - partially fulfills Gen. Ed. Distribution: Social Sciences) or Environmental Economics	3
ENVS Ethics requirement - may partially fulfill Gen. Ed. Distribution: Arts & Humanities	3
Elective or Upper-division Elective (if needed)	3
<b>Credit Hours</b>	<b>15-16</b>

**Spring Semester**

ENVS Cornerstone requirement	3
ENVS Application requirement	2-6
ENVS Intermediate Social Science requirement - may partially fulfill Gen. Ed. Distribution: Social Sciences	3-4
ENVS Specialization course	3
Elective or Upper-division Elective (if needed)	3-0
<b>Credit Hours</b>	<b>14-16</b>

**Year Four**

**Fall Semester**

ENVS Capstone	3
ENVS Specialization course	3
ENVS Specialization course	4-3
Gen. Ed. Distribution course (example: Arts & Humanities)	3
Elective or Upper-division Elective (if needed)	3
<b>Credit Hours</b>	<b>16-15</b>

**Spring Semester**

ENVS Specialization course	3
Gen. Ed. Distribution/Diversity course (example: Arts & Humanities/US Perspective)	3
Elective or Upper-division Elective (if needed)	3
Elective or Upper-division Elective (if needed)	3
Elective or Upper-division Elective (if needed)	3
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>120-126</b>

**Learning Outcomes**

Students will be able to:

- Integrate scientific principles of earth systems and human-environment interactions, understanding of perspectives and values, and practical responses in the study of environmental problems and proposed solutions.
- Evaluate different sources, claims, and data for environmental topics and construct their own arguments.
- Produce an independent research-based analysis of an environmental issue.
- Evaluate contrasting perspectives on and values for environmental issues.
- Generate effective communication about environmental topics in written and oral format.

**Curriculum Principles**

For the classes that Environmental Studies faculty teach, we strive to build student skills and knowledge from freshman to senior year through designing a curriculum that deliberately scaffolds skills and knowledge. This will be accomplished through communication amongst the faculty as facilitated by the curriculum committee to make sure that each individual class is serving students' learning in light of the larger program goals. Curriculum mapping and analysis of assessments will help to ensure that we are delivering the curriculum we intend and serving the students' educational goals. For classes that are taught by other departments we will review and align major requirements so that those classes serve the overall learning outcomes of the major and the students' educational progress.

**Curriculum Goal Statement**

The environmental studies undergraduate major is focused on training students rigorously in the multiple dimensions of environmental change through courses that integrate scientific understanding of human-environment interactions, practical responses to environmental problems, and the values that shape our decisions and behavior.