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

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<td>ENVS 1000</td>
<td>Introduction to Environmental Studies</td>
<td>4</td>
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<tr>
<td>ENVS 1001</td>
<td>Introduction to Human Dimensions of Environmental Studies</td>
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Introductory Sequence in Biology or Earth Science

Complete one of the following options. All classes from this combination must be in the same department.

Biology Option

Complete any two of these lecture/laboratory combinations

EBIO 1210 General Biology 1
& EBIO 1230 and General Biology Laboratory 1

Geology Option

GEOL 1030 Introduction to Geology Laboratory 1
and any two of the following introductory Geology courses

GEOL 1010 Exploring Earth
or GEOL 1012 Exploring Earth for Scientists

GEOL 1020 Dodos, Dinos, and Deinococcus: The History of a Habitable Planet

GEOL 1040 Geology of Colorado

GEOL 1060 Global Change: An Earth Science Perspective

GEOL 1150 Water, Energy and Environment: An Introduction to Earth Resources

GEOL 1170 Our Deadly Planet

GEOL 2001 Planet Earth

Atmospheric and Oceanic Sciences Option

Complete all courses

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

Physical Geography Option

Complete both courses

GEOG 1001 Environmental Systems: Climate and Vegetation

GEOG 1011 Environmental Systems: Landscapes and Water

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 Eclogy for Environmental Studies

ENVS/CVEN 3434 Introduction to Applied Ecology

ENVS/ATOC 3600/ Principles of Climate

GEOG 3601

EBIO 2040 Principles of Ecology

GEOG 3511 Introduction to Hydrology

GEOL 2001 Planet Earth

GEOG 2005 Introduction to Earth Materials

Intermediate Policy Requirement

Choose one course from the following: 3

PSCI 2106 Introduction to Public Policy Analysis
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**Intermediate Social Science Requirement**
Choose one course from the following:
- 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
- ECON 3535 Natural Resource Economics or ECON 3545 Environmental Economics

**Ethics Requirement**
Choose one course from the following:
- 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):
- 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

**Application Requirement (An Internship or Field Course)**
Choose one course from the following:
- 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/CVEN 4090/CVEN 3173 Creative Climate Communication
- ENVS/IAFS 3640 Data Analysis for Global Environmental Affairs
- ENVS 3930 Internship
- 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

**Cornerstone Requirement**
Choose one course from the following:
- ENVS/GEOG 3520 Energy and Climate Change: An Interdisciplinary Approach
- ENVS 4800 Capstone: Critical Thinking in Environmental Studies
- ENVS 4990 Senior Thesis

**Capstone Requirement**
Choose one course from the following:
- ENVS 3800 The Art of Research: The Essential Elements of Research in Environmental Studies
- 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

**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

1 Students cannot receive credit for both GEOL 1010 and GEOL 1012. GEOL 2001 requires a prerequisite of any 1000-level GEOL lecture or ENVS 1000.

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.

**Year One**
**Fall Semester**
ENVS 1000 Introduction to Environmental Studies (partially fulfills Gen. Ed. Distribution: Natural Sciences) 4
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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

Spring Semester
ENVS 1001  Introduction to Human Dimensions of Environmental Studies  4


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

Credit Hours  15-16

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

Credit Hours  16

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

Credit Hours  15-16

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

Credit Hours  14-16

Year Four
Fall Semester
ENVS Capstone  3

ENVS Specialization course  3

ENVS Specialization course  3

Gen. Ed. Distribution course (example: Arts & Humanities/US Perspective)  3

Elective or Upper-division Elective (if needed)  3

Credit Hours  15

Total Credit Hours  120-126

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.