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 includes 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 major 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ENVS 1000</td>
<td>Introduction to Environmental Studies</td>
<td>4</td>
</tr>
<tr>
<td>ENVS 1001</td>
<td>Introduction to Human Dimensions of Environmental Studies</td>
<td>4</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**

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>EBIO 1210 &amp; EBIO 1230</td>
<td>General Biology 1 and General Biology Laboratory 1</td>
<td>7-8</td>
</tr>
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</table>

**Geology Option**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 1012</td>
<td>Exploring Earth for Scientists</td>
<td></td>
</tr>
<tr>
<td>GEOL 1020</td>
<td>Dodos, Dinos, and Deinococcus: The History of a Habitable Planet</td>
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**Atmospheric and Oceanic Sciences Option**

Complete all courses.

<table>
<thead>
<tr>
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<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ATOC 1050 &amp; ATOC 1070 &amp; ATOC 1060</td>
<td>Weather and the Atmosphere and Weather and the Atmosphere Laboratory and Our Changing Environment: El Nino, Ozone, and Climate</td>
<td>3-5</td>
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</table>

**Physical Geography Option**

Complete both courses.

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<tr>
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</thead>
<tbody>
<tr>
<td>GEOG 1001</td>
<td>Our Changing Planet: Climate &amp; Vegetation</td>
<td></td>
</tr>
<tr>
<td>GEOG 1011</td>
<td>Our Changing Planet: Landscapes &amp; Water</td>
<td></td>
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</tbody>
</table>

Introductory Course in Chemistry or Physics

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

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CHEM 1011</td>
<td>Environmental Chemistry 1</td>
<td></td>
</tr>
<tr>
<td>CHEM 1113 &amp; CHEM 1114</td>
<td>General Chemistry 1 and Laboratory in General Chemistry 1</td>
<td></td>
</tr>
<tr>
<td>PHYS 1110</td>
<td>General Physics 1 (calculus based)</td>
<td></td>
</tr>
<tr>
<td>PHYS 2010</td>
<td>General Physics 1 (algebra based)</td>
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</tbody>
</table>

Intermediate Natural Science Requirement

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

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVS 2000</td>
<td>Applied Ecology for Environmental Studies</td>
<td></td>
</tr>
<tr>
<td>ENVS/CVEN 3434</td>
<td>Introduction to Applied Ecology</td>
<td></td>
</tr>
<tr>
<td>ENV/ATOC 3600/</td>
<td>Principles of Climate</td>
<td></td>
</tr>
<tr>
<td>GEOG 3601</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBIO 2040</td>
<td>Principles of Ecology</td>
<td></td>
</tr>
<tr>
<td>GEOG 3511</td>
<td>The Water Cycle</td>
<td></td>
</tr>
<tr>
<td>GEOL 2001</td>
<td>Planet Earth</td>
<td></td>
</tr>
<tr>
<td>GEOL 2005</td>
<td>Introduction to Earth Materials</td>
<td></td>
</tr>
</tbody>
</table>

Intermediate Policy Requirement

Choose one course from the following: 3

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<tbody>
<tr>
<td>PSCI 2106</td>
<td>Introduction to Public Policy Analysis</td>
<td></td>
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Environmental Studies - Bachelor of Arts (BA)

**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 Natural Resource Economics 3
- or ECON 3545 Environmental Economics

**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
- EBI0 1010 Introduction to Statistics and Quantitative Thinking for Biologists
- EBI0 4410 Biological Statistics
- GEOG/GEOL 3023 Statistics and Geographic Data
- MATH 2510 Introduction to Statistics
- MATH 2530 Psychological Science I: Statistics
- SOCY 2061 Introduction to Social Statistics
- MATH 1300 Calculus 1
- MATH 1310 Calculus for Life Sciences
- APPM 3500 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 Environments Field School

**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

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
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  3

Elective  3

Spring Semester  Credit Hours  16-17
ENVS 1001  Introduction to Human Dimensions of Environmental Studies  4


Elective  3

Elective  3

Year Two  Credit Hours  13-15
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

Spring Semester  Credit Hours  15-16
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  Credit Hours  16
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)  3

or Environmental Economics

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  Credit Hours  14-16
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

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

Credit Hours  16-15

Spring Semester  Credit Hours  15
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

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.

• Evaluate how environmental movements, policies, decision-making processes, benefits, information and burdens are shaped by and influence systems of exploitation and inequality.

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.