Environmental Studies Major
Requirements for students declaring the major fall 2017 or later

OVERVIEW

The Environmental Studies (ENVS) Major requires a minimum of 63 credit hours and includes introductory course work in natural sciences, economics, and mathematics; intermediate (sophomore and junior level) coursework in policy, ethics, economics, and writing; and advanced coursework offered by several departments and programs at CU Boulder. Required courses taught by the ENVS program (introductory, cornerstone, advanced writing, and capstone) integrate the academic divisions of natural science, social science, and humanities, providing skills and knowledge applicable to the pursuit of solutions to environmental challenges faced at local to global scales.

Coursework in the ENVS major fulfills the following areas of the Arts and Sciences Core Curriculum: Natural Science, Contemporary Societies, Ideas and Values, and upper division Writing and Rhetoric. ENVS courses also may fulfill the Quantitative Reasoning and Mathematical Skills (QRMS) and Human Diversity requirements. All major coursework must be completed with a grade of C- or better and the cumulative GPA in all courses that apply to the ENVS major must be 2.00. A total of 45 credit hours with the ENVS prefix will apply toward the 120 credit hours required for the Bachelor of Arts degree from the College of Arts and Sciences. Students majoring in ENVS may have more than 15 credit hours available for upper division electives in addition to major coursework and A&S Core.

For information regarding plans of study within the ENVS major please refer to course description in the 2017-2018 course catalog, the guidance documents posted on the ENVS undergraduate curriculum web pages, and, above all else, the ENVS faculty and academic advisors.

The ENVS major requirements and the courses that fulfill them are listed below and in the Degree Audit, found in MyCUInfo. Semester course offerings are updated frequently on the undergraduate curriculum pages of the ENVS Program Website.

NATURAL SCIENCE REQUIREMENTS

Purpose: Understand the scientific method in the natural sciences, how it generates knowledge, and be able to relate the results of scientific research to problems and questions as they relate to the environment, broadly defined.

Introductory Sequence in Environmental Studies

Complete the Environmental Studies sequence

- ENVS 1000 (4) Introduction to Environmental Studies
- ENVS 1001 (4) Introduction to Human Dimensions of Environmental Solutions

Introductory Sequence in Biology or Earth Science

Complete one sequence and applicable lab(s)

- EBIO 1210 (3) + EBIO 1230 (1) General Biology 1 and lab
- EBIO 1220 (3) + EBIO 1240 (1) General Biology 2 and lab
- EBIO 1250 (4) Introduction to Ecology and Evolutionary Biology Research
- EBIO 1100 (3) + EBIO 1110Biology and

Society and lab OR

- ATOC 1050 (3) + ATOC 1070 (1) Weather and the Atmosphere and lab
- ATOC 1060 (3) Our Changing Environment

OR

- GEOG 1030 (4) Environmental Systems 1—Climate and Vegetation with lab

- GEOG 1001 (4) Environmental Systems 1—Climate and Vegetation with lab
- GEOG 1011 (4) Environmental Systems 2—Landscapes and Water with lab

OR

Complete GEOL 1030 (1) Introduction to Geology Laboratory 1 plus two of the following introductory Geology courses:

- GEOL 1010 (3) Exploring Earth or GEOL 1012 (3) Exploring Earth for Scientists
- GEOL 1020 (3) History of a Habitable Planet
- GEOL 1040 (3) Geology of Colorado
- GEOL 1060 (3) Global Change 1—An Earth Science Perspective
- GEOL 1150 (3) Water, Energy and Environment: An Introduction to Earth Resources
- GEOL 1170 (3) Our Deadly Planet
- GEOL 2001 (4) Planet Earth

Introductory Sequence in Chemistry or Physics

Complete one course and lab if lab is co-requisite

- CHEM 1011 (3) Environmental Chemistry 1
- CHEM 1113 (4) + CHEM 1114 (1) General Chemistry 1 and lab
- PHYS 1110 (4) General Physics 1
- PHYS 2010 (5) General Physics 1 with lab

Intermediate Natural Science

Complete one course and lab if lab is requisite

- ENVS 2000 (4) Introduction to Applied Ecology for Environmental Studies
- ENVS/CVEN 3434 (3) Introduction to Applied Ecology*
- ENVS/ATOC 3600/GEOG 3601 (3) Principles of Climate
- EBIO 2040 (4) Principles of Ecology
- GEOG 3511 (4) Introduction to Hydrology
- GEOL 2001 (4) Planet Earth
- GEOL 2005 (4) Introduction to Earth Materials

SOCIAL SCIENCE REQUIREMENTS

Purpose: Gain a basic knowledge of existing environmental laws and policies and the processes through which they are developed and implemented. Become familiar with the drivers of human actions regarding social-ecological systems. Learn to analyze environmental problems and critically assess the ways in which public policies may help to address them.

Intermediate Policy

Complete one course

- PSCI 2106 (3) Introduction to Public Policy Analysis
- PSCI 2116 (3) Introduction to Environmental Policy
- PSCI 3206 (3) The Environment & Public Policy

Intermediate Social Science

Complete one course

- ENVS/GEOG 3022 (3) Climate Politics and Policy
- ENVS 3030 (3) Topics in Environmental Social Sciences
- ENVS 3031 (3) Environmental Psychology
- ENVS 3032 (3) Environment, Media and Society

Students are responsible for knowing and abiding by co- and prerequisites.
Read course descriptions.
*Contact host department to enroll.

- ENVS 3033 (3) Governing the Environment
- ENVS 3034 (3) Environmental Justice

VALUES REQUIREMENTS

Purpose: Examine the economic drivers and underlying moral beliefs, personal and social ethics, principles, and theoretical commitments that often inform environmental discourse and also drive decision-making.

Economics

Complete two courses

- ECON 2010 (4) Principles of Microeconomics and
- ECON 3535 (3) Natural Resource Economics or
- ECON 3545 (3) Environmental Economics

Ethics

Complete one course

- ENVS/PHIL 3140 (3) Environmental Ethics
- ENVS/PSCI 3064 (3) Environmental Political Theory

SKILLS REQUIREMENTS

Purpose:

Math—Learn to use mathematical approaches to quantify, understand, and develop solutions to complex issues.
Writing—Develop an understanding of rhetorical situations in professional writing and be able to apply critical thinking skills when communicating. Learn to frame a problem and develop an idea from knowledge based on evidence.
Application—Acquire practical and "hands-on" experience applying knowledge and skills outside the classroom. Improve the ability to integrate knowledge and skills taught in the ENVS major and emphasize their real- world applications.

Statistics or Calculus 1

Complete one course

- EBIO 1010 (3) Introduction to Statistics and Quantitative Thinking for Biologists (QRMS)
- EBIO 4410 (4) Biological Statistics
- GEOG/GEOL 3023 (4) Statistics and Geographic Data (QRMS)
- MATH 2510 (3) Introduction to Statistics (QRMS)
- PSCI 2075 (3) Quantitative Research Methods (QRMS)
- PSYC 2111 (4) Psychological Science 1: Statistics
- SOCY 2061 (3) Introduction to Social Statistics (QRMS)47
- MATH 1300 (5) Calculus 1 (QRMS)
- MATH 1310 (5) Calculus for Life Sciences (QRMS)
- APPM 1350 (4) Calculus 1 for Engineers (QRMS)

Writing

Complete course

- ENVS 3020 (3) Advanced Writing in Environmental Studies

Application

Purpose:

Application courses in ENVS aim to help students do one or more of the following: a) develop specific, practical skills, b) acquire practical, 'hands-on' experience, and/or c) apply their knowledge and skills in 'real-world' contexts. Many

Application classes are taught outside of the classroom (e.g., as field courses, internships, or Education Abroad classes) but some Applications classes are taught in the classroom but engage in real-world projects with clients or stakeholders or teach practical skills.

Complete one course

- ENVS 2100 (3) Topics in Applied Environmental Studies
- ENVS 3001 (3) Sustainable Solutions Consulting
- WNVS 3005 (3) Environmental Education: From Theory to Practice
- ENVS 3100 (3) Topics in Applied Environmental Studies
- ENVS 3103 (3) Mining 4 Corners
- ENVS 3173/THTR 4173/ATLS 3173 (3) Creative Climate Communication
- ENVS/IAFS 3640 (3) Global Data Analysis
- ENVS 3930 (3) Internship*
- ENVS 4050 (3) Field Studies in Environmental Sciences
- ENVS/EBIO 4340 (4) Conservation Biology and Practice in Brazils Atlantic Forest*
- ENVS/ EBIO/MUSM 4795 (3) Museum Field Methods/Zoology and Botany
- EBIO 4320 (3) Conservation Planning and Structured Decision Making
- EBIO 4460 (2) Special Topics: Field Methods
- ARTS 4444 (6) Art and Rural Environments
- CVEN 3434 (3) Introduction to Applied Ecology*
- EBIO 4090 (2) Coral Reef Ecology*
- EBIO 4100 (3) Mountain Research Station field courses*
- EDUC 4833 (3) Teaching and Learning Earth Systems and Analysis*
- EVEN 4100 (3) Environmental Sampling*
- GEOL 2700 (2) Introduction to Field Geology
- GEOL 3050 (2) GIS for Geologists
- GEOL 4444 (3) Data Visualization for Earth and Environmental Scientists

CORNERSTONE REQUIREMENT

Purpose: Cornerstone courses in ENVS aim to synthesize knowledge and skills gained in lower-division environmental courses. These courses are all taught within the ENVS department and are one of the core opportunities in the ENVS curriculum for students to engage with environmental challenges and solutions from an applied, interdisciplinary approach to the human dimensions of environmental change that integrates the natural sciences, social sciences, and humanities. Cornerstone courses engage students in an in-depth study of a specific topic (e.g., climate change, energy, natural resources, or sustainability). Students become conversant with how science, policy, and values can be integrated into environmental problem solving and gain competencies in critically engaging with proposed solutions to environmental challenges. Cornerstone courses are intended for juniors and must be completed at CU Boulder. These courses help students to prepare for Specialization and Capstone courses.

Complete one course

- ENVS/ GEOL 3520 (3) Energy & Climate Change
- ENVS 3525 (3) Intermediate Environmental Problem Analysis: Topical Cornerstone
- ENVS 3555 (3) Sustainable Economies
- ENVS 3621 (3) Energy, Policy & Society

CAPSTONE REQUIREMENT

Purpose: Capstone courses in ENVS aim to synthesize knowledge and skills gained throughout the ENVS curriculum. These courses are all taught within the ENVS department and are the culminating opportunity in the ENVS curriculum for students to engage with environmental challenges and solutions from an applied, interdisciplinary, approach to the human dimensions of environmental change that integrates the natural sciences, social sciences, and humanities. Capstone courses engage students in an in-depth study of a specific

topic (e.g., climate change, energy, natural resources, or sustainability). These courses contain a project-based experience, whereby students work alone or in groups to develop a significant capstone project (i.e., a project that is undertaken over several weeks or the entire semester). This project can be more theoretical and scholarly, or more applied. Students become conversant with how science, policy, and values can be integrated into environmental problem solving and gain competencies in critically engaging with proposed solutions to environmental challenges. Capstone courses are intended for seniors and must be completed at CU Boulder.

Complete one course

- ENVS 3800 (3) The Art of Research
- ENVS 4800 (3) Capstone: Critical Thinking in Environmental Studies (students may take only one ENVS 4800 class)
- ENVS 4850 (1-3) ENVS Honors Thesis Research
- ENVS 4950 (3) Seminar: ENVS Honors Thesis
- ENVS 4990 (3) Senior Thesis*
- ENST 4150 (3) Energy Policy Project

SPECIALIZATION REQUIREMENT

Purpose:

Specialization courses allow students to focus on one aspect of environmental studies and develop a greater depth of understanding on a topic. Specialization courses focus on one or more specific aspects of either a) the human dimensions of environmental change, or b) environmental science. Specialization courses are all upper-division (i.e., 3000- or 4000-level) courses. Students have extensive latitude in the Specialization courses they choose and can select Specialization classes that in aggregate help them to develop expertise in an area of focus that meets their interests and goals.

Complete a minimum of 12 credits from the following list.

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.

- ENVS 3001 (3) Sustainable Solutions Consulting
- ENVS 3005 (3) Environmental Education: From Theory to Practice
- ENVS 3007 (3) Animal Ethics and Policy
- ENVS/EBIO 3040 (4) Conservation Biology
- ENVS/PHYS 3070 (3) Energy & the Environment
- ENVS/GEOL 3520 (3) Energy & Climate Change
- ENVS/ATOC 3600/GEOG 3601 (3) Principles of Climate
- ENVS 3621 (3) Energy, Policy & Society
- ENVS/SOCY 4027 (3) Inequality, Democracy & the Environment
- ENVS/SOCY 4030 (3) Sociology of Climate Change
- ENVS 4100 (3) Special Topics in Environmental Studies
- ENVS 4120 (4) Special Topics in Environmental Studies
- ENVS 4135 (3) Dogs, Wolves and Humans
- ENVS/EBIO/GEOL 4160 (3) Introduction to Biogeochemistry
- ENVS/GEOG 4201 (3) Biometeorology
- ANTH 4020 (3) Explorations in Anthropology:
  - Conservation/Indigenous Peoples
- ATOC 3050 (3) Principles of Weather
- ATOC 3070/GEOL 3070 (3) Introduction to Oceanography
- ATOC 3300/GEOG 3301 (3) Analysis of Climate & Weather Observations
- ATOC 3500/CHEM 3151 (3) Air Chemistry & Pollution

Students are responsible for knowing and abiding by co- and prerequisites.
Read course descriptions.
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- ATOC 4200 (3) Biogeochemical Oceanography
- ATOC 4215 (3) Descriptive Physical Oceanography
- ATOC 4550 (3) Mountain Meteorology
- ATOC 4700 (3) Weather Analysis & Forecasting
- ATOC 4720 (3) Introduction to Atmospheric Dynamics
- ATOC 4730 (3) Physical Oceanography and Climate
- ATOC 4750 (3) Desert Meteorology
- ATOC 4770 (3) Renewable Energy Meteorology
- ATOC 4780 (3) Ice Sheets and Climate
- ATOC 4800 (3) Policy Implications of Climate Controversies
- ATOC 4840 (3) Field Observations and Measurements Laboratory
- COMM 3370 (3) Environmental Communication
- COMM 3380 (3) Advanced Topics in Storytelling, Culture, & Climate Justice
- CVEN 4404 (3) Water Chemistry
- CVEN 4414 (1) Water Chemistry Laboratory
- EBIO 3180 (3) Global Ecology
- EBIO 3190 (3) Tropical Marine Ecology
- EBIO 3270 (3) Ecosystem Ecology
- EBIO/APRD 3523 (3) The Art and Strategy of Science Communication: Branding Climate Change
- EBIO 3590 (3) Plants and Society
- EBIO 4020 (3) Stream Biology
- EBIO 4030 (3) Limnology
- EBIO 4060 (3) Landscape Ecology
- EBIO 4140 (3) Plant Ecology
- EBIO 4145 (3) Restoration Ecology
- EBIO 4155 (3) Ecosystem Ecology
- EBIO 4460 (3) Global Land Degredation and Restoration
- EBIO 4800 (3) Critical Thinking in Biology:
    - Novel Ecosystems Soil Ecology
    - Ecosystem Management
    - Intervention Ecology
    - Land Use Sustainability
    - Microbial Ecology
- ECON 3403 (3) International Economics & Policy
- ECON 3784 (3) Economic Development & Policy
- ENVD 4023 (3) Environmental Impact Assessment
- FILM 3041 (3) Environmental Cinema
- GEOG 3053 (4) GIS: Mapping
- GEOG 3251 (3) Mountain Geography
- GEOG 3351 (3) Biogeography
- GEOG 3402 (3) Natural Hazards
- GEOG 3412 (3) Conservation Practice
- GEOG 3422 (3) Political Ecology
- GEOG 3612 (3) Geography of American Cities
- GEOG 3622 (3) Cities of the Global South
- GEOG 3682 (3) Geography of International Development
- GEOG 3692 (3) Introduction to Global Public Health
- GEOG 3812 (3) Mexico, Central America & the Caribbean
- GEOG 3822 (3) Geography of China
- GEOG 3832 (3) Geographies of South Asia

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- GEOG 3862 (3) Geography of Africa
- GEOG 3882 (3) Geography of the Former Soviet Union
- GEOG/GEOL 4093 (4) Remote Sensing of the Environment
- GEOG/GEOL 4241 (4) Principles of Geomorphology
- GEOG 4271 (3) The Arctic Climate System
- GEOG 4321 (3-4) Snow Hydrology
- GEOG 4371 (3) Forest Geography: Principles & Dynamics
- GEOG 4401 (3) Soils Geography
- GEOG 4430 (3) Conservation Trends
- GEOG 4501 (3) Water Resources & Water Management of Western US
- GEOG 4632 (3) Development Geography
- GEOG 4712 (3) Political Geography
- GEOG 4732 (3) Population Geography
- GEOG 4742 (3) Topics in Environment and Society:
    - Hazard & Risk Assessment
    - Landscape, Society & Meaning
- GEOG 4772 (3) Geography of Food and Agriculture
- GEOG 4812 (3) Environment and Development in South America
- GEOG 4852 (3) Health and Medical Geography
- GEOL 3030 (3) Introduction to Hydrogeology
- GEOL 3050 (2) GIS for Geologists
- GEOL 3040 (3) Global Change: The Recent Geological Record
- GEOL 3130 (3) Global Warming, Understanding the Forecast
- GEOL 3320 (3) Introduction to Geochemistry
- GEOL 4444 (3) Data Visualization for Earth and Environmental Scientists
- GEOL 3820 (3) The Fluid Earth
- GEOL 3950 (3) Natural Catastrophes and Geologic Hazards
- GEOL 4060 (4) Oceanography
- HIST 4416 (3) Environmental History of North America
- JPNS 3881 (3) Environment, Nature and Disaster in Japanese Literature and Culture
- PACS 3860 (3) Environmental Conflict and Conflict Resolution
- PHIL 2140 (3) Environmental Justice
- PSCI 4012 (3) Global Development
- PSCI 4732 (3) Critical Thinking in Development
- RUSS/SCAN 3251 (3) Arctic Noir: Environment, Landscape and Literature of the Far North
- SOCY 3002 (3) Population and Society*
- SOCY 3012 (3) Women and Development*
- SOCY 4007 (3) Global Human Ecology*
- SOCY 4037 (3) Hazards, Disasters & Society*
- SOCY 4047 (3) Topics in Environment and Society
- SOCY 4052 (3) Social Inequalities in Health
- SOCY 4117 (3) Food and Society

Additional Notes

1. Many CU Study Abroad programs have courses approved for Application and Specialization requirements.
2. If you took a course not listed as a specialization and would like to see if it can be applied to the major, please consult your academic advisor.

Students are responsible for knowing and abiding by co- and prerequisites.
Read course descriptions.
*Contact host department to enroll.

3. Topics courses may apply to the ENVS specialization requirement, although offerings will vary semester by semester. For current semester course lists, which include topics classes, refer to the ENVS undergraduate curriculum web pages.
4. Topics course numbers that may apply to the ENVS major, depending upon course content, include:
    - ANTH 4020 - Explorations in Anthropology
    - ATOC 4500 - Special Topics in Atmospheric and Oceanic Sciences
    - EBIO 4460 - Special Topics
    - ENVD 4363 – Special Topics: Physical Factors in Environmental Design
    - GEOG 4001 - Special Topics in Geography
    - GEOG 4002 - Special Topics in Geography
    - GEOG 4003 - Special Topics in Geography