ENVIRONMENTAL STUDIES

The Environmental Studies program at CU Boulder is a hub for facilitating interdisciplinary collaboration in environment and sustainability. The program nurtures interdisciplinary academic training for undergraduate and graduate students, provides guidance for students with career aspirations in environment and sustainability venues, promotes diverse professional education experiences, fosters fundamental and applied research, forms meaningful connections with communities beyond the university, and integrates innovative, interdisciplinary programs unified by the themes of environment and sustainability.

Course code for this program is ENVS.

Bachelor's Degree

- Environmental Studies - Bachelor of Arts (BA) ([catalog.colorado.edu/undergraduate/colleges-schools/arts-sciences/programs-study/environmental-studies/environmental-studies-bachelor-arts-ba](catalog.colorado.edu/undergraduate/colleges-schools/arts-sciences/programs-study/environmental-studies/environmental-studies-bachelor-arts-ba))

Certificate

- Renewable and Sustainable Energy - Certificate ([catalog.colorado.edu/undergraduate/colleges-schools/arts-sciences/programs-study/environmental-studies/renewable-sustainable-energy-certificate](catalog.colorado.edu/undergraduate/colleges-schools/arts-sciences/programs-study/environmental-studies/renewable-sustainable-energy-certificate))

Faculty

While many faculty teach both undergraduate and graduate students, some instruct students at the undergraduate level only. For more information, contact the faculty member's home department.

- Bhattacharya, Atreyee ([https://experts.colorado.edu/display/fisid_156320)](https://experts.colorado.edu/display/fisid_156320)
  Instructor; PhD, Harvard University
- Boykoff, Maxwell Thomas ([https://experts.colorado.edu/display/fisid_147562](https://experts.colorado.edu/display/fisid_147562))
  Associate Professor; PhD, University of California-Santa Cruz
- Brooks, Cassandra
  Assistant Professor; BS, Bates College
- Carrico, Amanda R. ([https://experts.colorado.edu/display/fisid_153054](https://experts.colorado.edu/display/fisid_153054))
  Assistant Professor; PhD, Vanderbilt University
- Ciplet, David ([https://experts.colorado.edu/display/fisid_156064](https://experts.colorado.edu/display/fisid_156064))
  Assistant Professor; PhD, Brown University
- Collinge, Sharon Kay ([https://experts.colorado.edu/display/fisid_107088](https://experts.colorado.edu/display/fisid_107088))
  Professor; PhD, Harvard University
- Dilling, Lisa ([https://experts.colorado.edu/display/fisid_138024](https://experts.colorado.edu/display/fisid_138024))
  Associate Professor; PhD, University of California-Santa Barbara
- Doak, Daniel Forest ([https://experts.colorado.edu/display/fisid_151963](https://experts.colorado.edu/display/fisid_151963))
  Professor; PhD, University of Washington
- Hale, Benjamin Slater ([https://experts.colorado.edu/display/fisid_141456](https://experts.colorado.edu/display/fisid_141456))
  Associate Professor; PhD, SUNY at Stony Brook
- Hartter, Joel N ([https://experts.colorado.edu/display/fisid_154043](https://experts.colorado.edu/display/fisid_154043))
  Associate Professor; PhD, University of Florida
- Hinckley, Eve-Lyn ([https://experts.colorado.edu/display/fisid_147806](https://experts.colorado.edu/display/fisid_147806))
  Assistant Professor
- Litt, Jill S. ([https://experts.colorado.edu/display/fisid_140636](https://experts.colorado.edu/display/fisid_140636))
  Associate Professor; PhD, Johns Hopkins University
- Miller, Dale Lee ([https://experts.colorado.edu/display/fisid_115748](https://experts.colorado.edu/display/fisid_115748))
  Senior Instructor; MA, University of Colorado Denver
- Neff, Jason C ([https://experts.colorado.edu/display/fisid_117652](https://experts.colorado.edu/display/fisid_117652))
  Professor; PhD, Stanford University
- Newton, Peter ([https://experts.colorado.edu/display/fisid_154466](https://experts.colorado.edu/display/fisid_154466))
  Assistant Professor; PhD, University of East Anglia (England)
- Pielke, Roger A ([https://experts.colorado.edu/display/fisid_104166](https://experts.colorado.edu/display/fisid_104166))
  Professor; PhD, University of Colorado Boulder
- Rogers, Sarah ([https://experts.colorado.edu/display/fisid_142221](https://experts.colorado.edu/display/fisid_142221))
  Lecturer; MS, Northern Arizona University
- Townsend, Alan Ronald ([https://experts.colorado.edu/display/fisid_107584](https://experts.colorado.edu/display/fisid_107584))
  Professor; PhD, Stanford University
- Vodehnal, Carrie ([https://experts.colorado.edu/display/fisid_158066](https://experts.colorado.edu/display/fisid_158066))
  Instructor; MA, Washington University in Saint Louis
- Wessman, Carol A ([https://experts.colorado.edu/display/fisid_100909](https://experts.colorado.edu/display/fisid_100909))
  PhD, University of Wisconsin-Madison
- White, James ([https://experts.colorado.edu/display/fisid_102726](https://experts.colorado.edu/display/fisid_102726))
  Professor; PhD, Columbia University In the City of New York

Courses

**ENVS 1000 (4) Introduction to Environmental Studies**

Surveys environmental studies, examining ecological, socioeconomic, political, aesthetic, and technological factors that influence the quality of life on Earth. Required for ENVS majors.

**Additional Information:** Arts Sci Core Curr: Natural Science Non-Sequence

**ENVS 1001 (4) Introduction to Developing Environmental Solutions**

Builds on ENVS 1000 to give students greater understanding of how to approach environmental issues and work toward solutions. Integrates all focal areas of ENVS - sciences, policy, values - with greatest emphasis on learning science, data analysis and critical thinking fundamentals. Uses case studies of local issues to provide context for skill building and synthesis.

**Requisites:** Requires a prerequisite course of ENVS 1000 (minimum grade C).

**Grading Basis:** Letter Grade

**ENVS 1150 (3) First-Year Writing in Energy, Environment and Sustainability**

Provides development of effective writing skills, knowledge and habits for success in the campus culture using topics related to the environmental sciences, energy, sustainability and academic/career interests. Focuses on the processes in rhetoric, emphasizing skills in creative, analytical and critical thinking, as well as research and presentation using digital and "old fashioned" methods and materials.

**Requisites:** Restricted to Environmental Studies (ENVS) or Environmental Design (ENVD) majors only.

**Grading Basis:** Letter Grade

**Additional Information:** Arts Sci Core Curr: Written Communication
ENVS 2000 (4) Applied Ecology for Environmental Studies
Covers how ecological ideas and principles underlie both the problems and solutions of multiple environmental issues. Ecology of environmental concerns ranging from endangered species to global carbon cycling will be reviewed, including perspectives from physiological, behavioral, population, community and ecosystem ecology. Fulfills intermediate natural science requirement for Environmental Studies major.
Equivalent - Duplicate Degree Credit Not Granted: EBI0 2040 and EBI0 2640
Recommended: Prerequisites ENVS 1000 and a course in introductory statistics and two courses in introductory biology or physical geography.

ENVS 2001 (3) Topical Seminar in Environmental Studies
Serves as an introductory seminar to topics in environmental studies. Topics are diverse and include such areas as climate and conflict, food production, land use change, and other emerging areas in environmental studies.
Grading Basis: Letter Grade

ENVS 2100 (2-4) Topics in Applied Environmental Studies
Covers a variety of topics not currently offered in the curriculum: offered depending on instructor availability and student demand. Fulfills application requirement in Environmental Studies major.
Repeatable: Repeatable for up to 6.00 total credit hours.
Recommended: Prerequisite ENVS 1000.

ENVS 2840 (1-6) Independent Study
Students work with an approved faculty sponsor to explore a topic in greater depth and to pursue an interest that is not offered in the formal curriculum.
Repeatable: Repeatable for up to 8.00 total credit hours.
Recommended: Prerequisite ENVS 1000.

ENVS 3001 (3) Sustainable Solutions Consulting
Introduces students to green design, industrial ecology, and life cycle analysis. Students use basic techniques of environmental auditing to analyze the CU Boulder campus. Fulfills application requirement for Environmental Studies major.
Requisites: Requires prerequisite course of ENVS 1000 (minimum grade D-). Restricted to students with 57-180 credits (Junior or Senior) Environmental Studies (ENVS) majors only.
Recommended: Prerequisite any two-semester science sequence.

ENVS 3020 (3) Advanced Writing in Environmental Studies
Offers training in critical thinking and analytical writing skills appropriate to upper-division classes. Writing assignments integrate the subject matter of different topical areas. Fulfills writing requirement for Environmental Studies major.
Requisites: Restricted to students with 57-180 credits (Junior or Senior) Environmental Studies (ENVS) majors only.
Recommended: Prerequisite ENVS 1000.
Additional Information: Arts Sci Core Curr: Written Communication

ENVS 3022 (3) Climate Politics and Policy
Engages students in exploring the realm of contemporary and historical climate policy at three major levels of government: international, national and local/regional. Through course lectures, discussions, readings and activities, students will become conversant with the mechanisms and concerns involved in climate policy and politics and develop their own sense of how to judge the success of climate policies. Fulfills intermediate social science requirement in Environmental Studies Major.
Equivalent - Duplicate Degree Credit Not Granted: GEGO 3022
Recommended: Prerequisite ENVS 1000 or GEGO 1972.

ENVS 3030 (3-4) Topics in Environmental Social Sciences
Covers a variety of topics that may include human ecology, environment and society, and quantitative environmental social science. Offered depending upon instructor availability and student demand. Fulfills intermediate social science requirement for Environmental Studies major. Not repeatable for credit.
Recommended: Prerequisite ENVS 1000.

ENVS 3031 (3) Energy and Human Behavior
Examines why people behave the way they do as it relates to energy use and support for energy/climate policy. Addresses questions such as: what motivates people to conserve energy? Why don't people invest in energy efficiency, even when it saves them money? How do you promote pro-environmental behavior? Fulfills intermediate social science requirement for ENVS major.
Recommended: Prerequisite ENVS 1000.
Grading Basis: Letter Grade

ENVS 3032 (3) Environment, Media and Society
Examines how mass media influence our society, specifically with regard to environmental issues and outcomes. Focuses on media influence over environmental policies and policy, environmental public opinion, popular culture, and environmental/scientific knowledge. Fulfills intermediate social science requirement for Environmental Studies major.
Recommended: Prerequisite ENVS 1000.

ENVS 3040 (4) Conservation Biology
Applies principles of population ecology, population genetics, biogeography, animal behavior, and paleobiology to the maintenance of biodiversity and natural systems. The resulting theory is then applied to conservation policy and management techniques.
Equivalent - Duplicate Degree Credit Not Granted: EBI0 3040
Recommended: Prerequisite EBI0 2040 or EBI0 2640.

ENVS 3064 (3) Environmental Political Theory
Examines environmental discourses as conceptual means for theorizing environmental politics, and applies normative political theories to contemporary environmental policy issues. Considers the roles of political actors (individuals, groups, the state) in defining and addressing environmental problems on local, national, and global levels.
Equivalent - Duplicate Degree Credit Not Granted: PSCI 3064
Additional Information: Arts Sci Core Curr: Ideals and Values

ENVS 3070 (3) Energy and the Environment
Examines contemporary issues in energy consumption and its environmental impact, including fossil fuel use and depletion; nuclear energy and waste disposal; solar, wind, hydroelectric, and other renewable sources; home heating; energy storage; fuel cells; and alternative transportation vehicles. Includes some basic physical concepts and principles that often constrain choices. No background in physics is required.
Equivalent - Duplicate Degree Credit Not Granted: PHYS 3070
Additional Information: Arts Sci Core Curr: Natural Science Non-Sequence

ENVS 3100 (2-4) Topics in Applied Environmental Studies
Covers a variety of topics not currently offered in the curriculum; offered depending upon instructor availability and student demand. Fulfills application requirement for Environmental Studies major.
Repeatable: Repeatable for up to 8.00 total credit hours.
Recommended: Prerequisite ENVS 1000.
ENVS 3103 (3) Applied Environmental Studies: Mining in Four Corners
Explores mining related issues that have pronounced impact on the environment, economy and politics of the Four Corners region. Students apply their basic knowledge of environmental science, policy and values toward the understanding of and productive discourse about the conflicts and opportunities brought about by the mining industry in the Four Corners region. Course includes a seven day field trip, visiting mining and reclamation sites in New Mexico, Utah and Colorado. Fulfills application requirement for Environmental Studies majors.
Recommended: Prerequisite ENVS 1000 and one year natural science.

ENVS 3140 (3) Environmental Ethics
Examines major traditions in moral philosophy to see what light they shed on value issues in environmental policy and the value presuppositions of the economic, ecological, and juridical approaches to the environment.
Equivalent - Duplicate Degree Credit Not Granted: PHIL 3140
Requisites: Restricted to students with 27-180 credits (Sophomores, Juniors or Seniors) only.
Additional Information: Arts Sci Core Curr: Ideals and Values

ENVS 3173 (3) Creative Climate Communication
We generate multimodal compositions on the subject of climate change and engage with various dimensions of issues associated with sustainability. We work to deepen our understanding of how issues associated with climate change are or can be communicated, by analyzing previously created expressions from a variety of media (interactive theatre, film, fine art, television programming, blogs, performance art, for example) and then be creating our own work.
Equivalent - Duplicate Degree Credit Not Granted: ATLS 3173 and THTR 4173
Recommended: Prerequisite ENVS 1000.

ENVS 3434 (3) Introduction to Applied Ecology
Emphasizes the integration of physical, chemical and biological processes in controlling terrestrial and aquatic ecosystems. Ecosystem concepts are applied to current environmental and water quality problems. Includes field trips and a group project.
Equivalent - Duplicate Degree Credit Not Granted: CVEN 3434
Requisites: Requires prerequisite courses of CHEM 1113 or CHEN 1211 and CHEM 1221 (all minimum grade D-).

ENVS 3520 (3) Energy and Climate Change: An Interdisciplinary Approach
Examines sources of energy and other resources in light of their availability, use, environmental impact, as well as their impact on policy, economics and values. As fossil fuels are the dominant energy source today, particular emphasis is placed on climate impacts and the carbon cycle. All material is assessed through the lenses of the physical sciences, policy, ethics and economics.
Equivalent - Duplicate Degree Credit Not Granted: GEOL 3520
Repeatability: Repeatable for up to 6.00 total credit hours. Allows multiple enrollment in term.
Recommended: Prerequisite a two-course sequence in any natural science.
Additional Information: Arts Sci Core Curr: Natural Science Non-Sequence

ENVS 3525 (3) Intermediate Environmental Problem Analysis: Topical Cornerstones
Engages students in in-depth study of a topic such as climate change, energy, natural resources or sustainability. Through lectures, discussions, readings and activities, students will become conversant with how science, policy and values are integrated in environmental problem solving, and develop their own sense of how to critically engage with proposed solutions. Fulfills cornerstone requirement for Environmental Studies Major. Recommended corequisite: ENVS 3020.
Repeatability: Repeatable for up to 6.00 total credit hours.
Recommended: Prerequisite ENVS 3020.

ENVS 3600 (3) Principles of Climate
Describes the basic components of the climate system: the atmosphere, ocean, cryosphere and lithosphere. Investigates the basic physical processes that determine climate and link the components of the climate system. Covers the hydrological cycle and its role in climate, climate stability and global change.
Equivalent - Duplicate Degree Credit Not Granted: GEOG 3601 and ATOC 3600
Recommended: Prerequisites one semester of calculus and ATOC 1060 or ATOC 3300 or GEOG 3301 or GEOG 1001.
Additional Information: Arts Sci Core Curr: Natural Science Non-Sequence

ENVS 3621 (3) Energy Policy and Society
Examines how society makes decisions about energy, and how these decisions affect the environment and the economy. Uses tools from policy analysis, economics, and other disciplines to build an in-depth understanding of energy's role in U.S. contemporary society. Fulfills Cornerstone requirement of ENVS majors. Recommended corequisite: ENVS 3020.
Recommended: Prerequisites ENVS 1000 and ENVS 3070 or PHYS 3070.

ENVS 3640 (3) Data Analysis for Global Environmental Affairs
Develops data analysis techniques for global environmental data including demographic, economic, agricultural, fisheries and energy sectors. Designed to support the development of basic and intermediate data analysis skills for students in the Global Environmental Affairs certificate program. Includes hands-on exploration of up-to-date global data sets from a variety of sources. Fulfills the application requirement for the ENVS major.
Equivalent - Duplicate Degree Credit Not Granted: IAFS 3640
Grading Basis: Letter Grade

ENVS 3800 (3) The Art of Research: The Essential Elements of Research in Environmental Studies
Introduces students to the practice of doing research in environmental studies. Examines how to define a research problem, select methods, design research, construct arguments and evaluate others’ research. Aims to familiarize students with the process of doing research and enable them to proceed with confidence in pursuing their own research topics. Recommended for juniors planning to write ENVS honors theses. Fulfills capstone requirement in Environmental Studies major.
Requisites: Requires prerequisite course of ENVS 1000 (minimum grade D-). Restricted to students with 57-180 credits (Junior or Senior) majors only.
Recommended: Prerequisite ENVS 3020.
ENVS 3930 (1-3) Internship
Relates classroom theory to practice. Provides academically supervised opportunities for environmental studies majors to work in public and private organizations on projects related to students' career goals. Fulfills application requirement in Environmental Studies major.
Repeatable: Repeatable for up to 6.00 total credit hours. Allows multiple enrollment in term.
Recommended: Prerequisite ENVS 1000.

ENVS 4027 (3) Inequality, Democracy, and the Environment
Focuses on the structural forces affecting environmental degradation and environmental behavior by examining the relationships between (a) inequality and democratic decision making and (b) undemocratic decision making; U.S. and corporate food and energy policy; and global environmental degradation. The course also focuses on the role that global inequality plays in fostering environmental degradation.
Equivalent - Duplicate Degree Credit Not Granted: SOCY 4027
Requisites: Restricted to students with 57-180 credits (Juniors or Seniors).

ENVS 4030 (3) Sociology of Climate Change
Examines the human drivers and causes of climate change, the health and security risks it creates and the efforts of societies to mitigate and adapt to its effects.
Equivalent - Duplicate Degree Credit Not Granted: SOCY 4030
Requisites: Restricted to students with 57-180 credits (Juniors or Seniors).

ENVS 4050 (2-4) Field Methods in Ecosystem Science
Studying the relationships among organisms, physical features, biogeochemistry and humans in ecological communities - this is ecosystem science. This course provides conceptual understanding and practical experience conducting research. Students will pose their own scientific questions, learn several field and lab methods, analyze data and design a project. Upon completion, they will have useful skills for internships, jobs and graduate school. Fulfills application requirement in ENVS major. Department enforced prerequisite: ENVS 1000 or two semesters of natural sciences; such as chemistry, geology or biology.
Grading Basis: Letter Grade

ENVS 4100 (3) Special Topics in Environmental Studies
Various topics not normally covered in the curriculum: offered depending on student demand and specialties of faculty. Applied to specialization requirement for Environmental Studies major.
Repeatable: Repeatable for up to 6.00 total credit hours. Allows multiple enrollment in term.

ENVS 4120 (4) Special Topics in Environmental Studies
Various topics not normally covered in the curriculum: offered depending on student demand and specialties of faculty. Applies to specialization requirement for Environmental Studies major.
Repeatable: Repeatable for up to 8.00 total credit hours. Allows multiple enrollment in term.

ENVS 4160 (3) Introduction to Biogeochemistry
Covers fundamentals of biogeochemical cycling, emphasizing water, carbon and nutrient dynamics in terrestrial ecosystems; chemical interactions of atmosphere, biosphere, lithosphere and hydrosphere; natural and human-managed environments.
Equivalent - Duplicate Degree Credit Not Granted: EBIO 4160 and GEOL 4160
Requisites: Requires prerequisite courses of GEOL 3320 or EBIO 3270 and CHEM 1011 (all minimum grade D-).

ENVS 4201 (3) Biometeorology
Introduces this interdisciplinary science, studying the interactions between atmospheric processes and living organisms (plants, animals, and humans). Discusses how organisms adapt to a changing environment. Uses a practical, problem-solving approach to explore these interactions.
Equivalent - Duplicate Degree Credit Not Granted: GEOG 4201
Requisites: Requires a prerequisite course of GEOG 1001 and APPM1340 and 1345 or APPM1350 or ECON1088 or MATH1081 or 1300 or 1310 or 2510 or ANTH4000 or APPM4570 or BCOR1020 or ECON3818 or GEOG3023 or GEOL3023 or PSCI2075 or PSYC3101 or SOCY2061 or 4061 (min grade D-).

ENVS 4340 (4) Conservation Biology and Practice in Brazil's Atlantic Forest
Field Studies. Examines the application of conservation principles in the Atlantic Forest of Brazil, a 'biodiversity-in-crisis' setting. Explores successful conservation strategies integrated with efforts to alleviate socioeconomic issues. Three-week Maymester, Study Abroad Global Seminar.
Equivalent - Duplicate Degree Credit Not Granted: ENVS 5340, EBIO 4340 and EBIO 5340
Recommended: Prerequisites EBIO 2040 or ENVS 2000 or 2000/higher-level course in ANTH, EBIO, ENVS, EVEN, GEOG, IAFS or other discipline related to ecology or sustainability.
Grading Basis: Letter Grade

ENVS 4795 (3) Field Methods in Zoology and Botany
Class covers research and field methods for biological disciplines associated with natural history museums: vertebrates, invertebrates and plants. Emphasis is on field research techniques: observations, sampling, collection and preservation methods and comparisons among elevation zones. Includes 5 field labs, 2 weekend trips, 5 lab practica, experience with several taxonomic experts and individual research projects.
Equivalent - Duplicate Degree Credit Not Granted: MUSM 4795 and MUSM 5795

ENVS 4800 (3) Capstone: Critical Thinking in Environmental Studies
Examines a specific environmental topic in depth, synthesizing information from complex and controversial issues. Different course sections present different topics. Fulfills capstone requirement for Environmental Studies major.
Requisites: Restricted to students with 57-180 credits (Junior or Senior) Environmental Studies (ENVS) or Geography (GEOG) majors only.
Recommended: Prerequisites ENVS 1000 and ENVS 3020.

ENVS 4840 (1-6) Independent Study
Students work with an approved faculty sponsor to explore a topic in greater depth and to pursue an interest that is not offered in the formal curriculum.
Repeatable: Repeatable for up to 8.00 total credit hours.
Recommended: Prerequisite ENVS 1000.

ENVS 4990 (3) Senior Thesis
Supervised project involving original research. Thesis proposal must be accepted by honors chairman. Open only to Environmental Studies majors with at least a 3.30 GPA. Fulfills capstone requirement in Environmental Studies major.
Repeatable: Repeatable for up to 6.00 total credit hours.
Requisites: Requires prerequisite course of ENVS 1000 (minimum grade D-). Restricted to students with 57-180 credits (Junior or Senior) Environmental Studies (ENVS) majors only.
Recommended: Prerequisite ENVS 3020.