

# ENVIRONMENTAL SCIENCES (ENVS)

## ENVS 1044 - Introduction to Environmental Sciences (3 Credits)

This survey course develops a basic understanding of ecological relationships and environmental systems. Issues such as the effects of human activities on earth's environment, extinction or diversity, greenhouse effect, hazardous or toxic wastes and human population growth are discussed. Students must also take the accompanying laboratory ENVS 1045. No co-credit with ENVS 1042. Prereq or Coreq: ENVS 1045. Term offered: fall, spring, summer. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq or co-req: ENVS 1045

Additional Information: Denver Core Requirement, Biol Phys Sci - Lec.

Typically Offered: Fall, Spring, Summer.

## ENVS 1045 - Introduction to Environmental Sciences Laboratory (1 Credit)

Introduces the basic scientific approach through investigations, observations, and experiments in environmental science. Students must also take the accompanying lecture ENVS 1044. No co-credit with ENVS 1042. Prereq or Coreq: ENVS 1044. Term offered: fall, spring, summer. Max hours: 1 Credit.

Grading Basis: Letter Grade

Prereq or co-req: ENVS 1044

Additional Information: Denver Core Requirement, Biol Phys Sci - Lab.

Typically Offered: Fall, Spring, Summer.

## ENVS 1342 - Environment, Society and Sustainability (3 Credits)

Overview of perspectives on environmental issues within the context of sustainable development and taking a systems approach. The focus is on social science approaches to explore the human footprint on the earth, environmentalism, scientific uncertainty, policy creation and social change. Note: This course is a prerequisite for GEOG 4680 Urban Sustainability: Perspectives and Practice. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS2.

Grading Basis: Letter Grade

Additional Information: Denver Core Requirement, Social Sciences; GT courses GT Pathways, GT-SS2, Soc Behav Sci: Geography.

Typically Offered: Fall, Spring, Summer.

## ENVS 2939 - Internship (3 Credits)

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: sophomore standing or higher. Repeatable. Max Hours: 9 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

Restriction: Sophomore standing or higher.

## ENVS 3082 - Energy and the Environment (3 Credits)

For students of various backgrounds who wish to increase their understanding of the environmental and technical issues of supplying the energy demands of our society. Alternative energy sources and conservation are explored as solutions to promote a sustainable society. Note: One college-level science course and MATH 1110 or equivalent are strongly recommended as preparation for optimal student success. Cross-listed with PHYS 3082. Term offered: fall. Max hours: 3 Credits.

Grading Basis: Letter Grade

Typically Offered: Fall.

## ENVS 3232 - Weather and Climate (3 Credits)

Introduces the processes and systems that govern both day-to-day weather and longer-term climate variations. Covers instrumentation and weather forecasting techniques. Prereq: ENVS 1044 and 1045 or ENVS 1042 or GEOG 1202 with a C- or higher. Cross-listed with GEOG 3232.

Term offered: fall, spring, summer. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: ENVS 1044 and 1045 or ENVS 1042 or GEOG 1202 with a C- or higher.

Typically Offered: Fall, Spring, Summer.

## ENVS 3500 - Topics in Environmental Sciences (1-6 Credits)

Note: Topics may vary from one offering to the next. Repeatable.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

## ENVS 4380 - Anthropocene Futures (3 Credits)

We are living in the "Anthropocene"—an era of rapid environmental and societal changes, and of decline and loss resulting from accelerating human interactions with Earth systems. Warming climates, wildfires, floods, water and food insecurity, novel ecosystems, and even pandemics such as COVID-19, are phenomena of the Anthropocene. With a still growing human population and a finite planet, understanding and overcoming such challenges is more pressing than ever, if people are to co-evolve with Earth toward a sustainable future. This interdisciplinary seminar course tells the scientific story of humanity's intensifying interactions with the planet and explores possible future paths. Through presentations, readings and discussion, students will examine topics that include the origin and significance of Anthropocene in Earth's evolutionary history, the debates and evidences for a new geologic epoch, large-scale trajectories of environmental change, a safe operating space, and planting seeds for a "good" Anthropocene. In doing so, students will acquire skills and experiences in critical thinking and analytical reasoning to grapple with many uncertainties and tensions of the Anthropocene.

Cross-listed with GEOG 4380, GEOG 5380, and ENVS 5380. Term offered: fall. Max hours: 3 Credits.

Grading Basis: Letter Grade

Typically Offered: Fall.

## ENVS 4500 - Topics In Environmental Sciences (1-6 Credits)

Note: Topics may vary from one offering to the next. Note: Necessary prior coursework varies according to the topic. Students should consult with the instructor. Repeatable. Max hours: 6 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

## ENVS 4650 - Environmental Education (3 Credits)

This course links the theory and practice of environmental education to inform curricular development and pedagogical knowledge. Cross-listed with ENVS 5650 and SCED 5650. Max hours: 3 Credits.

Grading Basis: Letter Grade

## ENVS 4720 - Climate Change: Causes, Impacts and Solutions (3 Credits)

Examines science behind past, present & future climate change & environmental, social & political implications & solutions. Explores recent scientific research, syntheses & mainstream literature advancing knowledge about causes & consequences of natural & anthropogenic climate change. Prereq: GEOG 3232 with a C- or higher. Cross-listed with GEOG 4720/ GEOG 5720/ ENVS 5720. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: GEOG 3232 with a C- or higher.

**ENVS 4740 - Soil Science and Geography (3 Credits)**

Reviews chemical and physical properties of soils, soil development, and geographic distributions of soil types in the context of the role that soils play in natural and human-altered ecosystems. Cross-listed with GEOG 4740, GEOG 5740, ENVS 5740. Term offered: fall. Max hours: 3 Credits.

Grading Basis: Letter Grade

Typically Offered: Fall.

**ENVS 4750 - Beeography: Geography of Bees (4 Credits)**

Beeography is an introduction to the bee world and the amazing diversity in Colorado and beyond. The course will examine the distribution of bees and the pressures they face in different environmental and cultural contexts. It will examine different methods to support and increase bee populations and pollination services, especially in populated environments, including backyard beekeeping of honeybee and native bee populations. Field and lab activities will include beekeeping, native bee collection and identification, bee dissections, pollen processing and identification, and trips to area bee museum collections and apiaries.

Prereq: ENVS 1044 and 1045 or BIOL 2010 (or 2061/2097/2030) and BIOL 2011 (or 2081/2098/2031) or BIOL 2020 (or 2051/2095/2040) and BIOL 2021 (or 2071/2096/2041) with a C- or higher. Cross-listed with GEOG 4750, GEOG 5750, and ENVS 5750. Term offered: summer. Max hours: 4 Credits.

Grading Basis: Letter Grade

Prereq: ENVS 1044 and 1045 or BIOL 2010 (or 2061/2097/2030) and BIOL 2011 (or 2081/2098/2031) or BIOL 2020 (or 2051/2095/2040) and BIOL 2021 (or 2071/2096/2041) with a C- or higher.

Typically Offered: Summer.

**ENVS 4757 - Urban Climate and Air Quality (3 Credits)**

Explores how people alter climates on micro- to regional scales, and how this in turn affects human health and society. Focusses on recent scientific research, physical processes within cities, and the role of urbanization in global climate change. Cross-listed with GEOG 4757, GEOG 5757, ENVS 4757, and ENVS 5757. Term offered: spring. Max hours: 3 Credits.

Grading Basis: Letter Grade

Typically Offered: Spring.

**ENVS 4780 - Aquatic Ecology (3 Credits)**

This course explores the physical, chemical, and biological (including human) properties of aquatic ecosystems, and how the interrelationships between these properties define and influence advanced ecological processes. Special focus is given to lakes, reservoirs, wetlands, streams, rivers, and groundwater. Learning is facilitated through lectures, discussions, student presentations, laboratory and data exercises, and periodic (often virtual) field excursions. Prereq: BIOL 2010 (or 2061/2097/2030) and BIOL 2011 (or 2081/2098/2031) with a C- or higher. Cross-listed with ENVS 5780, BIOL 4780, and BIOL 5780. Max hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: BIOL 2010 (or 2061/2097/2030) and BIOL 2011 (or 2081/2098/2031) with a C- or higher.

**ENVS 4840 - Independent Study: ENVS (1-3 Credits)**

Department consent required. Repeatable. Max hours: 6 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

**ENVS 4880 - Directed Research (1-6 Credits)**

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

**ENVS 4995 - Global Study Topics (3-9 Credits)**

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education.

Repeatable. Max hours: 12 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 12.

Additional Information: Global Education Study Abroad.