

ENVIRONMENTAL STUDIES AND SUSTAINABILITY

Contact Information

Division
Sciences and Mathematics

Dean
Heather Roberts

Associate Dean
Karen Warburton

Division Office
V 211, Rocklin Campus

Overview

The Environmental Studies and Sustainability program at Sierra College provides students with the opportunity to meet the requirements to transfer to four-year colleges in the environmental fields including Environmental Studies and Environmental Science. The program provides students with a common interdisciplinary base with which to address issues of environmental health, sustainability and global stewardship. Students will have the opportunity to apply principles from a range of fields including the physical and life sciences, social sciences and philosophy, as well as technical skills utilized in ecosystem assessment and the expanding field of solar energy.

Faculty

Kristine D. Gilbert
Professor, Environmental Studies and Sustainability
B.A., University of California, Davis
M.S., California State University, Chico

Degrees/Certificates

Environmental Studies and Sustainability

AS Degree

Successful completion of the Environmental Studies and Sustainability curriculum will prepare students for transfer to four-year colleges or universities. The major has been designed to meet lower-division requirements for Environmental Studies and Environmental Science majors at transfer institutions. In all cases, students should consult with a counselor for more information on university admission and transfer requirements. Students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns:

- Sierra College Associate Degree Requirements (<http://catalog.sierracollege.edu/student-resources/general-education/associate-degree-requirements>);
- California State University General Education Breadth (<http://catalog.sierracollege.edu/student-resources/general-education/california-state-university-general-education-breadth-requirements>) pattern;
- Intersegmental General Education Transfer Curriculum (IGETC) (<http://catalog.sierracollege.edu/student-resources/general-education/intersegmental-general-education-transfer-curriculum-igetc>).

Required Courses

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| BIOL 0001 | General Biology | 4 |
| BIOL 0002 | Botany | 4.5 |
| BIOL 0003 | General Zoology | 4.5 |
| ESCI 0001 | Physical Geology | 3 |
| ECON 0001A or ECON 0001B | Principles of Macroeconomics Principles of Microeconomics | 3 |
| ESS 0001 | The Environment and the Human Impact | 3 |

Select 4-6 units from the following: 4-6

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| AGRI 0198 | Food, Society and the Environment | |
| AGRI 0221 | Introduction to Soil Science | |
| ANTH 0002 | Cultural Anthropology | |
| ANTH 0014 | Globalization Studies | |
| BIOL 0013 | Field Methods in Ecology | |
| BIOL 0014 | Natural History, Ecology and Conservation (also ESS 0014) | |
| BIOL 0016A | Local Ecosystems of Placer County ¹ | |
| BIOL 0016B | Local Ecosystems of Nevada County ¹ | |
| BIOL 0016C | Vernal Pools and the California Prairie ¹ | |
| BIOL 0016D | Biology of Waterfowl and Marsh Birds ¹ | |
| BIOL 0016E | Ecology of the Sierran Conifer Forest ¹ | |
| BIOL 0016G | Field Paleontology and Ancient Environments (also ESCI 0016G) ¹ | |
| BIOL 0016H | Ecology of the Mendocino Coast ¹ | |
| BIOL 0016I | Biology of Mono Lake and the Great Basin ¹ | |
| BIOL 0016J | Ecology of Point Reyes National Seashore ¹ | |
| BIOL 0016K | Foothill Ecology of the Sierra Nevada ¹ | |
| BIOL 0016L | Aquatic and Riparian Environments of California Waterways ¹ | |
| BIOL 0016M | Marine Mammals and Birds ¹ | |
| BIOL 0016N | Ecology of the Modoc Plateau ¹ | |
| BIOL 0016O | Ecology of the High Sierra and White Mountain ¹ | |
| BIOL 0016P | Death Valley and Desert Ecosystems ¹ | |
| BIOL 0016Q | Ecology of Mid-Western North America ¹ | |
| BIOL 0016R | Canyon Lands of the Southwest ¹ | |
| BIOL 0016T | Coastal Habitats of Northern California ¹ | |
| BIOL 0016U | Coastal Habitats of Central California ¹ | |
| BIOL 0016V | Deserts of Southern California ¹ | |
| BIOL 0016W | Biology/Ecology of the Klamath and the Southern Cascade ¹ | |
| BIOL 0016Y | Ecology of Selected Wilderness Ecosystems ¹ | |
| BIOL 0016Z | Ecology of the American River ¹ | |
| BIOL 0023 | Wildflower Identification | |
| BIOL 0024 | Wildland Trees and Shrubs (Dendrology) | |

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| CET 0040 | Beginning Photovoltaic Systems |
| ECON 0001A or ECON 0001B | Principles of Macroeconomics Principles of Microeconomics |
| ESCI 0001L | Physical Geology Laboratory |
| ESCI 0010 | Introduction to Earth Science |
| ESCI 0054A | Sierra Nevada and Western Basin and Range Provinces ¹ |
| ESCI 0054B | Great Valley and Coast Range Provinces ¹ |
| ESCI 0054C | Great Valley, Coast Ranges, and Sutter Buttes ¹ |
| ESCI 0054D | Western Sierra Nevada and the Mother Lode ¹ |
| ESCI 0054E | Major Rock Units of the Northern Sierra ¹ |
| ESCI 0055C | Weekend Field Geology-Point Reyes ¹ |
| ESCI 0055F | Weekend Field Geology ¹ |
| ESS 0006 | The Sierra Nevada |
| ESS 0007 | Energy, Environment, and Climate (also ESCI 0007) |
| ESS 0010 | Conservation of Natural Resources |
| ESS 0013 | Environmental Regulations |
| GEOG 0001 | Physical Geography |
| GEOG 0002 | Cultural Geography |
| GEOG 0090 | Introduction to Geographic Information Systems (GIS) |
| GEOG 0091A | Beginning Arc GIS |
| GEOG 0091B | Intermediate Arc GIS |
| MATH 0013 | Elementary Statistics |
| PHIL 0060 | Introduction to Environmental Ethics |
| PSYC 0170 | Environmental Psychology |
| Total Units | 26-28 |

¹ A maximum of 3 units may be taken from the BIOL 0016 and ESCI 0016, 0054 and 0055 field studies courses.

Courses

Understanding course descriptions (<http://catalog.sierracollege.edu/student-resources/course-information/understanding-course-descriptions>)

ESS 0001. The Environment and the Human Impact

Units: 3

Formerly known as INT 1

Advisory: Eligibility for ENGL 1A

Hours: 54 lecture

Theoretical and practical understanding of the principles of ecology, the complexities of technology, and the contemporary problems of the environment on both a local and global level. Lecture/discussion and films in the areas of population, technology, environmental restoration, land use, energy, pollution, and world hunger, as well as the basic concepts, economics, politics, poetry, literature, and philosophy of ecology. (CSU, UC)

ESS 0006. The Sierra Nevada

Units: 3

Formerly known as INT 6

Advisory: Eligibility for ENGL 1A

Hours: 54 lecture

Integrated study of the Sierra Nevada including its physical attributes, geological characteristics, origin and development, flora and fauna, water resources, historical and economic significance, and influences on literature, art, and culture. Includes contemporary environmental, economic, and management issues in the Sierra. (CSU, UC)

ESS 0007. Energy, Environment, and Climate

Units: 3

Also known as ESCI 7

Advisory: Eligibility for ENGL 1A

Hours: 54 lecture

Analysis of the nature of energy and the environmental impact of its societal use in the context of Earth's record of changing climate. Explores current global climate change due to post-1750 greenhouse gas emissions and strategies for mitigation and adaptation to changing climate predictions, emphasizing future alternative energy sources. Designed for students majoring in areas related to the environmental sciences and/or those interested in developing a substantiated understanding of the role played by citizens in ensuring a healthy environment for future generations. (CSU, UC)

ESS 0010. Conservation of Natural Resources

Units: 3

Formerly known as AGRI 190 and NATR 10

Advisory: Eligibility for ENGL 1A

Hours: 54 lecture

Use and protection of natural resources, including soil, water, forest, mineral, plant, and animal life. Ecological principles, history of the conservation movement, modern problems in resource use, and the citizen's role in conservation. (CSU, UC)

ESS 0013. Environmental Regulations

Unit: 1

Formerly known as BIOL 13A

Advisory: Completion of BIOL 14 or ESS 10 with grade of "C" or better

Hours: 18 lecture

Survey of major California environmental regulations and relevant federal regulations. Designed using case study analyses to explore environmental laws applicable to water, land and air resources. (CSU)

ESS 0014. Natural History, Ecology and Conservation

Units: 4

Also known as BIOL 0014

Advisory: Eligibility for ENGL 0001A

Hours: 108 (54 lecture, 54 laboratory)

Introduction to the study of biology and ecology of organisms and ecosystems of the world, with an emphasis on California. Special focus on significance of functioning ecosystems and human influence on biological environment. (CSU, UC)

ESS 0028. Independent Study

Units: 1-3

Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

ESS 0095. Internship in Environmental Studies and Sustainability

Units: 0.5-4

Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU-with unit limitation)

Program Student Learning Outcomes (PSLOs)

- Identify and describe the essential components of earth's natural environment - its physical, biological, energy-related, and ecological elements.
- Describe and analyze core environmental problems, their causes and consequences, and practical solutions.
- Apply the conservation of matter and energy to environmental systems.
- Investigate the role of governmental policy, citizen involvement, and/or ethics/values/morals in influencing human interaction with the environment.
- Evaluate and apply principles of sustainability to human activity on earth.