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# Environmental Studies

The Environmental Studies Program is an interdisciplinary program designed to develop an understanding of living and non-living earth processes and how they affect and are affected by the human population. Courses in biology, earth sciences and history provide a foundation in the functioning of living systems including population growth, ecology, and toxicology; geologic processes including energy resources, geologic hazards, and pollution; and human attitudes towards nature including historical perspective and context for our current situation.

Through these courses students will gain a better understanding of how humans are intimately connected with the environment and how human activities impact and are impacted by the environment.

An understanding of environmental matters is essential in today's world. Careers in natural resources, land use planning, business, energy, waste management, pollution control, law and environmental administration all require knowledge of environmental issues and the functioning of ecosystems. Career opportunities may require more discipline-specific studies in biology, geology or political science.

## Program Student Learning Outcomes

1. Explain how human activities impact the environment and how the environment impacts human society over time.
2. Explain the interconnections among the lithosphere, biosphere, hydrosphere and atmosphere.
3. Apply critical thinking to establish connections and evaluate the extent to which human activities degrade, protect, or rehabilitate environmental health.

## Faculty and Offices

Adam Green, *Faculty Coordinator* (EBS-319, ext. 2394)

Robert S. Gray, *Faculty, Earth Sciences* (EBS-111, ext. 2314)

David Morris, *Faculty, History* (IDC-359, ext. 5145)

Jeffrey W. Meyer, *Faculty, Earth Sciences* (EBS-110, ext. 4270)

Jan L. Schultz, *Faculty, Earth Sciences* (EBS-113, ext. 2313)

## Degree Awarded

Associate in Arts Degree, Environmental Studies

## A.A. Degree Requirements

All students majoring in Environmental Studies must complete a set of departmental requirements consisting of courses which provide a basic understanding of the physical, biological and social sciences and their application to analysis of environmental processes and issues. As a general curriculum, this option is suitable for students to maintain a broad range of choices for their degree. Additional required courses stress the need for transfer possibilities or for growth potential in the environmental professions.

## College Requirements

For Complete information, see "Graduation Requirements" in the *Catalog Index*.

## A.A. Degree: Environmental Studies

The following program will satisfy the core requirements and college requirements for graduation with an A.A. Degree, and includes additional recommended courses for transfer to most four-year institutions:

**Department Requirements (27 Units)**

ENVS 110 — Humans and the Biological Environment .....	3
ENVS 111 — Environmental Field Studies <b>or</b> .....	1
ENVS 210/EH 210 — Permaculture Design .....	1
ENVS 112/HIST 112 — American Environmental History .....	3
ENVS 115/ERTH 115 — Environmental Geology.....	3
ENVS 115L/ERTH 115L — Environmental Geology Lab.....	1
ENVS 116/ERTH 116 — Energy and Natural Resources.....	3

*Choose one course from each of the following areas:*

**Area A**

CHEM 101 — Introductory Chemistry .....	4
CHEM 104 — Fundamentals of General, Organic and Biological Chemistry .....	4
CHEM 155 — General Chemistry I .....	5
PHYS 101 — Conceptual Physics <b>and</b> PHYS 101L — Conceptual Physics Lab <b>or</b> PHYS 101H — Conceptual PHYS, Honors .....	4
PHYS 102 — Introduction to Physics for Science Majors .....	4
PHYS 105 — General Physics .....	4
PHYS 106 — General Physics .....	4
PHYS 121 — Mechanics of Solids and Fluids.....	5
PHYS 122 — Electricity and Magnetism .....	5

**Area B**

BIOL 100 — Concepts of Biology .....	4
BIOL 101 — Plant Biology <b>or</b> .....	5
BOT 121 — Plant Diversity.....	4
BIOL 102 — Animal Biology <b>or</b> .....	5
ZOOL 122 <b>and</b> 123 — Animal Diversity and Lab .....	4
BIOL 103 — Cell Biology .....	5.5
ERTH 111 — Dynamic Earth-Physical Geology <b>and</b> ERTH 111L — Dynamic Earth-Physical Geology Lab <b>or</b> ERTH 111H — Dynamic Earth-Physical Geology Honors <b>and</b> ERTH 111L — Dynamic Earth-Physical Geology Lab .....	4
ERTH 141 <b>and</b> 141L — Physical Geography and Lab <b>or</b> .....	
GEOG 101 <b>and</b> 101L — Physical Geography and Lab.....	4

**Area C**

ANTH 103 — Introduction to Cultural Anthropology .....	3
ERTH 142/GEOG 105 — Economic Geography .....	3
ECON 101 — Microeconomics.....	3
HIST 102 — History of the U.S. since 1865 <b>or</b> .....	3
HIST 102H — History of the U.S. since 1865, Honors .....	4
HIST 140 — Great Issues in Public Policy .....	3
HIST 151 — Science and Society .....	3
MATH 117 — Elementary Statistics <b>or</b> .....	
MATH 117H — Elementary Statistics, Honors .....	4
MATH 130 — Calculus for Biological Sciences, Social Sciences and Business I.....	5
MATH 150 — Calculus with Analytic Geometry I.....	5
PHIL 101 — Introduction to Ethics <b>or</b> .....	3
PHIL 101H — Introduction to Ethics, Honors .....	4
POLS 101 — American Government and Politics .....	3
POLS 104 — American Government: Policy Issues/Process.....	3

**Area D**

CS 131 — Assembly Lang. Prog. ....	4
CS 135 — Programming Fundamentals.....	3
ERTH 171/GEOG 171 — Introduction to GIS and Maps.....	2
ERTH 172/GEOG 172 — GIS Software Applications.....	2
MATH 131 — Calculus for Biological Sciences, Soc. Sciences and Business II.....	3
MATH 160 — Calculus with Analytic Geometry II.....	5

**Planning a Program for Transfer**

Special problems confront the student planning to transfer to a four-year university. Major requirements in Environmental Studies differ from school to school and within a single institution by major emphasis. You should work closely with the Counseling Center or a faculty adviser for the Environmental Studies Program.

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## Course Descriptions

### Environmental Studies

#### **ENVS 110 — Humans and the Biological Environment**

**(3) F, S — CSU, UC**

*Skills Advisories: Eligibility for ENG 110 or ENG 110H*

Growth and variations in populations of organisms and their interactions with the physical environment. Characteristics of living natural resources and changes caused by expanding human populations and technological developments. Satisfies SBCC General Education requirement in Natural Sciences when combined with ENVS 111. Required for the Environmental Studies major.

#### **ENVS 111 — Environmental Field Studies**

**(1) F, S — CSU, UC\***

*Corequisites: ENVS 110*

*Skills Advisories: Eligibility for ENG 110 or ENG 110H*

Field studies designed to demonstrate general ecological/environmental principles through exposure to and analysis of many different communities and sites of environmental concern. Satisfies SBCC General Education requirement in Natural Sciences when combined with ENVS 110. (\*UC transfer limit: no credit for ENVS 111 unless taken after or concurrently with ENVS 110)

#### **ENVS 112/HIST 112 — American Environmental History**

**(3) S — CSU, UC**

*Skills Advisories: Eligibility for ENG 110 or ENG 110H*

Traces the course of American attitudes and actions towards the environment, from the Indians and the European immigrants of colonial days to the 1980s. Discusses current environmental problems and shows their context in American development.

#### **ENVS 115/ERTH 115 — Environmental Geology**

**(3) F, S — CSU, UC**

*Skills Advisories: MATH 1 and ENG 103*

*Course Advisories: Concurrent enrollment in ENVS 115L/ERTH 115L and EARTH 131 or EARTH 132*

Introduction to the problems of volcanism, earthquakes, fire, floods, landslides and other geologic hazards; air and water pollution, hazardous materials and land use planning. Applications to the Santa Barbara area emphasized. Required of all Environmental Studies majors.

#### **ENVS 115L/ERTH 115L — Environmental Geology Laboratory**

**(1) F, S — CSU, UC**

*Co-requisite: ENVS 115/ERTH 115*

*Skills Advisories: MATH 1 and ENG 103*

Laboratory approach to topics covered in ENVS 115, with emphasis on rock and mineral identification, hazard assessment, geologic resource management and land use planning. In-lab field trips.

#### **ENVS 116/ERTH 116 — Energy and Natural Resources**

**(3) S — CSU, UC**

*Skills Advisories: MATH 4 and ENG 103*

Study of formation, exploration, development and judicious use of natural resources in relation to present and future energy requirements, electricity, conservation, fossil fuels, solar, geothermal, nuclear and hydrogen. Required of all Environmental Studies majors.

#### **ENVS 200 — Projects in Sustainability**

**(2) S — CSU**

*Skills Advisories: Eligibility for ENG 110 or ENG 110H*

Students work in groups to develop or continue projects that make the college and local community more sustainable (meets the needs of the present without compromising the needs of future generations to meet their own needs). Lectures, discussions and workshops provide the student with current knowledge in environmental science, sustainable practices, and real world skills needed to implement practical solutions to local environmental and social problems.

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**ENVS 210/ EH 210 — Permaculture Design**

**(1) F — CSU**

*Corequisites: None*

*Course Advisories: ENVS 110 or EH 110*

*Skills Advisories: Eligibility for ENG 110 or ENG 110H or ENG 110GB*

Application of ecological and environmental principles to designing human systems that are locally sustainable and require reduced inputs. When taken with ENVS 110 or EH 110, the successful student is certified as a Permaculture Design Trainee and receives a Permaculture Design Certificate recognized worldwide.

**ENVS 295 — Internship in Environmental Studies**

**(2-4) S — CSU**

*Skills Advisories: Eligibility for ENG 110 or ENG 110H*

*Limitation on Enrollment: Student must have completed a minimum of 2 units in ENVS or a minimum of 3 units in any of the following: EH, GLST, BIOL or EARTH*

Structured on-the-job experience in a field directly related to the student's area of interest in environmental studies.