

# ENVIRONMENTAL STUDIES

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## **DIRECTOR**

Andre Droxler

## **ASSOCIATE DIRECTOR**

Richard Johnson

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Winifred Hamilton

Karoline Mortensen

Donald Ostdiek

Lisa Slappey

The Environmental Studies Program offers several interdisciplinary courses for students interested in broadening their understanding of environmental issues. These courses often are team-taught by faculty from various areas of study.

Students wishing to major in an environmental program have 3 options: environmental science (see below), environmental engineering sciences (see civil and environmental engineering), or environmental policy (see policy studies). In addition, chemical and biomolecular engineering majors may create a focus area in environmental engineering (see chemical and biomolecular engineering) and earth science majors may follow an environmental earth science track (see earth science).

Students seeking advice regarding environmental programs may contact Andre Droxler, or the coordinator of the Center for the Study of Environment and Society.

## **DEGREE REQUIREMENTS FOR BA IN ENVIRONMENTAL SCIENCE**

Environmental science is an interdisciplinary program that addresses environmental issues in the context of what we know about earth, ecology, and society. In addition to its science core, the major also seeks to provide students with some appreciation of social, cultural, and policy dimensions of environmental issues, as well as exposure to the technologies of pollution control. The double major is designed to accommodate:

- Students wishing to obtain a solid preparation for later graduate study in environmental science or other careers as environmental professionals (e.g., environmental economics or environmental law)
- Students pursuing other careers (e.g., historians, lawyers, mechanical engineers, chemists) who hope to contribute to solutions to one of the major global issues of the 21st Century.

Students may take environmental science *only as a 2nd major*. The 67-semester-hour (minimum) double major may be taken in conjunction with any stand-alone major offered in any school of the university.

The key components of the double major include:

- Foundation course work in mathematics, physics, chemistry, and biology.
- A set of 5 undergraduate core courses, required of all double majors, that acquaint undergraduates with a range of environmental problems encountered by scientists, engineers, managers, and policy makers. Core courses stress the components of the global environment and their interactions.
- 24 semester hours of environmental electives from 4 categories: 1) social sciences and economics, 2) humanities and architecture, 3) natural sciences, and 4) engineering. Students may petition to have electives, in addition to those currently listed, apply toward the double major.

Major tracking forms are available in the Center for the Study of Environment and Society (CSES) office for declared environmental science majors.

Specific course requirements for a double major (BA) in environmental science include:

### **General Prerequisites**

BIOS 201 *Introductory Biology*

BIOS 202 *Introductory Biology*

CHEM 121 or 151 *General Chemistry with Laboratory*

CHEM 122 or 152 *General Chemistry with Laboratory*

MATH 101 or 111 *Single Variable Calculus I*

MATH 102 or 112 *Single Variable Calculus II*

PHYS 101 or 125 or 111 *Mechanics*

PHYS 102 or 126 or 112 *Electricity and Magnetism*

### **Core Courses**

BIOS 325 *Ecology*

ESCI 321 *Earth System Evolution and Cycles*

#### **1 of the following 2 courses**

CEVE 411 *Air Resource Management*

PHYS 203 *Atmosphere, Weather, and Climate*

#### **2 of the following 3 courses**

CEVE 401 *Introduction to Environmental Chemistry*

CEVE 412 *Hydrology and Watershed Analysis*

ESCI 454 *Geographic Information Science*

### **Advanced Electives (24 hours; at least 6 semester hours from each category)**

#### **Category A—Social Sciences and Economics**

CEVE 306 *Global Environmental Law and Sustainable Development*

CEVE 406 *Environmental Law*

ECON 480 *Environmental and Natural Resource Economics*

ENST 302/UNIV 303 *Environmental Issues: Rice into the Future*

ENST 312 *Environmental Battles in the 21st Century: Houston as a Microcosm*

POLI 317 *Congress*

POLI 331 *Environmental Politics and Policy*

POLI 332 *Urban Politics*

POLI 334 *Political Parties and Interest Groups*

SOCI 313 *Demography*

SOCI 367 *Environmental Sociology*

SOCI 411 *Social Change: Making Sense of Our Times*

#### **Category B—Humanities and Architecture**

ANTH 468/ESCI 468 *Climate Variability and Human Response*

ARCH 313 *Sustainable Architecture*

ARCH 351 *Social Issues and Architecture*

ENGL 367 *American Ecofeminism*

ENGL 368 *Literature and the Environment*

ENST 301/UNIV 300 *Introduction to the Environment: Environmental History and Literature*

#### **Category C—Natural Sciences**

BIOS 316 *Lab Module in Ecology*

BIOS 321 *Animal Behavior*

BIOS 323 *Conservation Biology*  
 BIOS 334 *Evolution*  
 BIOS 336 *Plant Diversity*  
 CHEM 211 *Organic Chemistry*  
 CHEM 395 *Advanced Module in Green Chemistry*  
 ESCI 323 *Earth Structure and Deformation*  
 ESCI 340 *Biogeochemistry*  
 ESCI 421 *Paleoceanography*  
 ESCI 430 *Trace Element and Isotope Geochemistry for Earth and Environmental Sciences*  
 ESCI 442 *Exploration Geophysics*  
 ESCI 450 *Remote Sensing*  
 ESCI 454 *Geographic Information Science*  
 ESCI 468/ANTH 468 *Climate Variability and Human Response*

**Category D—Engineering**

CEVE 201 *Introduction to Environmental Systems*  
 CEVE 203 *Introduction to Environmental Engineering*  
 CEVE 315 *Sustainable Development*

CEVE 401 *Introduction to Environmental Chemistry*  
 CEVE 403 *Principles of Environmental Engineering*  
 CEVE 411 *Air Resources Management*  
 CEVE 412 *Hydrology and Watershed Analysis*  
 CEVE 434 *Chemical Transport and Fate in the Environment*  
 CEVE 451 *Introduction to Transportation*  
 CEVE 470 *Basic Soil Mechanics*  
 CEVE 490 *Undergraduate Research in Environmental Engineering*  
 ENST 307/CEVE 307 *Energy and the Environment*  
 ENST 281/CHBE 281 *Engineering Solutions for Sustainable Communities*  
 STAT 300 *Model Building*  
 STAT 305 *Introduction to Statistics for the Biosciences*  
 STAT 310 *Probability and Statistics*  
 STAT 339/PSYC 339 *Statistical Methods—Psychology*

**See ENST in the Courses of Instruction section.**