



Double major in Environmental Science

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Lecturers

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Karoline Mortensen
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Degrees Offered: BA in Environmental Science

The BA in Environmental Science is an interdisciplinary program that addresses environmental issues in the context of what we know about earth, ecology, and society. The Program offers several interdisciplinary courses often team-taught by faculty from various areas of study. 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); and students pursuing other non-environmentally related careers who want to incorporate the environmental component to further solve environmental issues from their disciplines. Students seeking advice regarding the Environmental Studies program may contact Andre Droxler (andre@rice.edu), or the coordinator of the Center for the Study of Environment and Society (cses@rice.edu). Major tracking forms are available in the CSES office for declared environmental science majors.

Degree Requirements

Students may take environmental science **only** as a **second 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 courses in mathematics, physics, chemistry, and biology; five undergraduate core courses that acquaint undergraduates with a range of environmental problems encountered by scientists, engineers, managers, and policy makers; 24 semester hours of environmental electives from four 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.

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

General Prerequisites

EBIO 201 *Introductory Biology*
EBIO 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

EBIO 325 *Ecology*
ESCI 321 *Earth System Evolution and Cycles*

One of the following two courses

CEVE 411 *Atmospheric Processes*
ESCI 414 *Physics and Chemistry of the Atmosphere*

Two of the following three courses

CEVE 401 *Introduction to Environmental Chemistry*
CEVE 412 *Hydrology and Watershed Analysis*
ESCI/CEVE 453 *Geographic Information Science*

Advanced Electives (24 hours; at least six semester hours from each category)

Category A—Social Sciences and Economics

CEVE 306 *Global Environmental Law and Sustainable Development*
CEVE/ENST 406 *Environmental Law*
ECON/ENST 480 *Environmental Economics*
ENST 302/SOCI 304 *Environmental Issues: Rice into the Future*
ENST/ANTH 332 *The Social Life of Clean Energy*
POLI 317 *The Congress*
POLI 318 *The Presidency*
POLI 331 *Environmental Politics and Policy*
POLI 332 *Urban Politics*
POLI 334 *American Political Parties*
POLI 337 *Bureaucracy and Public Policy*
SOCI 313 *Demography*
SOCI/ENST 367 *Environmental Sociology*

CHEM 395 *Advanced Module in Green Chemistry*
ESCI 323 *Earth Structure and Deformation*
ESCI/EBIO/ENST 340 *Global Biogeochemical Cycles*
ESCI 421 *Paleoceanography*
ESCI 430 *Trace Element and Isotope Geochemistry for Earth and Environmental Sciences*
ESCI 442 *Exploration Geophysics*
ESCI/CEVE 450 *Remote Sensing*
ESCI 454/CEVE 453 *Geographic Information Science*

Category B—Humanities and Architecture

ARCH/ENST 313 *Sustainable Architecture*
ENGL 367 *American Ecofeminism*
ENGL 368/ENST 368 *Literature and the Environment*
ENGL 472 *Native American Literature*
HIST 376 *Natural Disasters in the Caribbean*

Category D—Engineering

EBIO 338 *Design and Analysis of Biological Experiments*
CEVE/HEAL 201 *Urban and Environmental Systems*
CEVE 203 *Principles of Environmental Engineering*
CEVE 315 *Sustainable Technologies for Developing Countries*
CEVE 401 *Chemistry for Environmental Engineering and Science*
CEVE 411 *Atmospheric Processes*
CEVE 412 *Hydrology and Watershed Analysis*
CEVE 434 *Fate and Transport of Contaminants in the Environment*
CEVE 451 *Analysis of Environmental Data*
CEVE 470 *Basic Soil Mechanics*
CEVE 490 *Special Study and Research*
ENST/CEVE/ESCI 307 *Energy and the Environment*
ENST/CHBE 281 *Engineering Sustainable Communities*
STAT 300 *Model Building*
STAT 305 *Introduction to Statistics for the Biosciences*
STAT 310/ECON 382 *Probability and Statistics*
PSYC 339 *Statistical Methods—Psychology*

Category C—Natural Sciences

ANTH 468 *Climate Variability and Human Response*
ENST/EBIO/LPAP 179 *Underwater ecology*
ENST 315 *Environmental Health*
EBIO 316 *Lab Module in Ecology*
EBIO 321 *Animal Behavior*
EBIO/ENST 323 *Conservation Biology*
EBIO 334 *Evolution*
EBIO 336 *Plant Diversity*
CHEM 211 *Organic Chemistry*