BACHELOR OF ARTS (BA) DEGREE WITH A MAJOR IN ENVIRONMENTAL SCIENCE AND A MAJOR CONCENTRATION IN ECOLOGY AND EVOLUTIONARY BIOLOGY

Program Learning Outcomes for the BA Degree with a Major in Environmental Science

Upon completing the BA degree with a major in Environmental Science, students will be able to:

1. Demonstrate foundational knowledge in the natural sciences that is fundamental to the Environmental Sciences. This understanding should be adequate to support the incorporation of environmental science knowledge into the study and practice of a field other than environmental science.
2. Integrate knowledge of natural and applied sciences to understand complex natural systems and cycles.
3. Synthesize knowledge from natural sciences and engineering and understand how it applies to the study of the environment.
4. Understand environmental issues from a scientific perspective and be able to solve issues using a variety of interdisciplinary perspectives (e.g., social sciences, economics, humanities, and/or architecture).

Requirements for the BA Degree with a Major in Environmental Science

For general university requirements, see Graduation Requirements (ga.rice.edu/undergraduate-students/academic-policies-procedures/graduation-requirements). Students pursuing the BA degree with a major in Environmental Science must complete:

- A minimum of 22-24 courses (a minimum of 62-64 credit hours) depending on course selection to satisfy major requirements.
- A minimum of 122-124 credit hours to satisfy degree requirements.
- A minimum of 60 credit hours outside of major requirements.
- A minimum of 4-6 courses (a minimum of 12-18 credit hours, depending on declared major concentration) taken at the 300-level or above.
- The requirements of a major concentration. When students declare the major (ga.rice.edu/undergraduate-students/academic-opportunities/majors-minors-certificates/#text) in Environmental Science, students must additionally identify and declare one of two major concentrations, either in:
  - Earth Science (ga.rice.edu/programs-study/departments-programs/natural-sciences/environmental-science/environmental-science-ba-earth-concentration/#Earth_Science), or
  - Ecology and Evolutionary Biology (p. 3)

Because of the common core requirements, it is possible for students to change their major concentration at any time, even after initially declaring the major. To do so, please contact the Office of the Registrar (registrar@rice.edu).

Environmental science is an interdisciplinary major 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.

The courses listed below satisfy the requirements for this major. In certain instances, courses not on this official list may be substituted upon approval of the major's academic advisor (or official certifier). Students and their academic advisors should identify and clearly document the courses to be taken.

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<th>Degree Requirements</th>
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Bachelor of Arts (BA) Degree with a Major in Environmental Science and a Major Concentration in Ecology and Evolutionary Biology

Field Experience

Select 1-2 courses from the following: 2-3

ENST 4XX
SEMINAR: Topics in Environmental Science 3

EBIO 306
INDEPENDENT RESEARCH FOR ECOLOGY & EVOLUTIONARY BIOLOGY UNDERGRADUATES

EBIO 316
LAB MODULE IN ECOLOGY

EBIO 317
LAB MODULE IN BEHAVIOR

EBIO 319
TROPICAL FIELD BIOLOGY

EBIO 320
ECOLOGY AND CONSERVATION OF BRAZILIAN WETLANDS LABORATORY

EBIO 324
CONSERVATION BIOLOGY LAB

EBIO 327
BIOLOGICAL DIVERSITY

EBIO 330
INSECT BIOLOGY LAB

EBIO 337
FIELD BIRD BIOLOGY LAB

ENST 379 / EBIO 379
LAB MODULE IN AQUATIC ECOLOGY WITH SCUBA

ESCI 103
FIELD TRIPS FOR THE EARTH

ESCI 334
GEODETICAL TECHNIQUES

ESCI 380 / FOTO 390
VISUALIZING NATURE

ESCI 390
GEOLOGY FIELD CAMP

ESCI 391
EARTH SCIENCE FIELD EXPERIENCE

FWIS 187
EXPLORING THE SCIENCE AND HISTORY OF HOUSTON'S BAYOUS

Major Concentration

Select 1 from the following Major Concentrations (see below for Major Concentration requirements): 9

Earth Science

Ecology and Evolutionary Biology

Advanced Electives 3

Social Sciences

Select 1 from the following: 3

ANTH 348
ANTHROPOLOGIES OF NATURE

ANTH 381
MEDICAL ANTHROPOLOGY

ENST 302 / SOCI 304
ENVIRONMENTAL ISSUES: RICE INTO THE FUTURE

ENST 332 / ANTH 332
THE SOCIAL LIFE OF CLEAN ENERGY

ENST 367 / SOCI 367
ENVIRONMENTAL SOCIOLOGY

ENST 437 / ECON 437
ENERGY ECONOMICS

ENST 480 / ECON 480
ENVIRONMENTAL AND ECONOMIC

POLI 331
ENVIRONMENTAL POLITICS AND POLICY

POLI 332
URBAN POLITICS

POLI 362
COMPARATIVE URBAN POLITICS AND POLICY

SOCI 313
DEMOGRAPHY

SOCI 423
SOCIOLOGY OF FOOD

Humanities and Architecture

Select 1 from the following: 3

ENGL 358
CONSUMPTION AND CONSUMERISM

ENGL 367 / SWGS 367
LITERATURE AND CULTURE OF THE US-MEXICO BORDERLANDS

ENST 202 / HUMA 202
CULTURE, ENERGY, AND THE ENVIRONMENT: AN INTRODUCTION TO ENERGY HUMANITIES

ENST 313 / ARCH 313
SUSTAINABLE DESIGN

ENST 322 / ARCH 322
CASE STUDIES IN SUSTAINABILITY: THE REGENERATIVE REPOSITIONING OF NEW OR EXISING RICE CAMPUS BU

ENST 368 / ENGL 368
LITERATURE AND THE ENVIRONMENT

ENGL 459
TOPICS IN LITERATURE AND ECOLOGY

HIST 376
NATURAL DISASTERS IN THE CARIBBEAN

HIST 425
20TH CENTURY AMERICAN CONSERVATION MOVEMENT

Natural Sciences and Engineering 2

Select 1 from the following: 3-4

CEVE 302 / ENGI 302
SUSTAINABLE DESIGN

CEVE 308
INTRODUCTION TO AIR POLLUTION CONTROL

CEVE 310
PRINCIPLES OF ENVIRONMENTAL ENGINEERING

CEVE 401
CHEMISTRY FOR ENVIRONMENTAL ENGINEERING AND SCIENCE LAB

CEVE 404
ATMOSPHERIC PARTICULATE MATTER

CEVE 411
ATMOSPHERIC PROCESSES

CEVE 412
HYDROLOGY AND WATER RESOURCES ENGINEERING

CEVE 420
ENVIRONMENTAL REMEDIATION RESTORATION

CEVE 434
FATE AND TRANSPORT OF CONTAMINANTS IN THE ENVIRONMENT

CEVE 484 / STAT 484
ENVIRONMENTAL RISK ASSESSMENT & HUMAN HEALTH

CHEM 211 & CHEM 213
ORGANIC CHEMISTRY I and ORGANIC CHEMISTRY DISCUSSION

ENST 307 / CEVE 307 / ESCI 307
ENERGY AND THE ENVIRONMENT

ENST 406 / CEVE 406
INTRODUCTION TO ENVIRONMENTAL LAW

PHYS 101 & PHYS 103
MECHANICS (WITH LAB) and MECHANICS DISCUSSION

PHYS 102 & PHYS 104
ELECTRICITY & MAGNETISM (WITH LAB) and ELECTRICITY AND MAGNETISM DISCUSSION

Total Credit Hours Required for the Major in Environmental Science 62-64

University Graduation Requirements (ga.rice.edu/undergraduate-students/academic-policies-procedures/graduation-requirements) 60

Total Credit Hours 122-124
Footnotes and Additional Information

1 Includes coursework completed as distribution credit, FWIS, LPAR, upper-level, residency (hours taken at Rice), 60 hours outside of the major (if applicable), and any additional academic program requirements. The "hours outside of the major" requirement may include all of the above university requirements.

2 CHEM 121 and CHEM 123 can be satisfied by completing CHEM 151 and CHEM 153. Similarly, CHEM 122 and CHEM 124 can be satisfied by completing CHEM 152 and CHEM 154.

3 Students may also petition to complete alternative courses to be applied toward the Advanced Electives requirement.

4 In addition to the courses in the Natural Sciences and Engineering electives list, students may complete 1 course listed in the major concentration requirements outside of the student's declared concentration.

Major Concentration: Ecology and Evolutionary Biology

Students must complete a total of 3 courses (minimum of 9 credit hours) as listed below to satisfy the requirements for the major concentration in Ecology and Evolutionary Biology.

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td></td>
<td><strong>Core Requirements</strong></td>
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<td>Select 2 from the following:</td>
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<tr>
<td>EBIO 270</td>
<td>ECOSYSTEM MANAGEMENT</td>
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<td>EBIO 323 / ENST 323</td>
<td>CONSERVATION BIOLOGY</td>
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<td>EBIO 372</td>
<td>CORAL REEF ECOSYSTEMS</td>
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<td><strong>Elective Requirements</strong></td>
<td>3</td>
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<tr>
<td>Select at least 1 from the following:</td>
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<tr>
<td>EBIO 270</td>
<td>ECOSYSTEM MANAGEMENT</td>
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<td>EBIO 321</td>
<td>ANIMAL BEHAVIOR</td>
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<td>EBIO 323 / ENST 323</td>
<td>CONSERVATION BIOLOGY</td>
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<td>EBIO 326</td>
<td>INSECT BIOLOGY</td>
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<td>EBIO 331 / BIOC 331</td>
<td>BIOLOGY OF INFECTIOUS DISEASE</td>
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<td>EBIO 334 / BIOC 334</td>
<td>EVOLUTION</td>
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<td>EBIO 336</td>
<td>PLANT DIVERSITY</td>
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<td>EBIO 338</td>
<td>DESIGN AND ANALYSIS OF BIOLOGICAL EXPERIMENTS</td>
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<td>EBIO 365</td>
<td>INTRODUCTORY PHYCOLOGY</td>
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<td>EBIO 366</td>
<td>APPLIED PHYCOLOGY</td>
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<td>CORAL REEF ECOSYSTEMS</td>
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<td>ESCI 340 / EBIO 340 / ENST 340</td>
<td>GLOBAL BIOGEOCHEMICAL CYCLES</td>
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Total Credit Hours 9

Footnotes and Additional Information

1 Note that the course not completed in the Core Requirements list for the major concentration in Ecology and Evolutionary Biology may be completed to apply towards the major concentration's Electives requirement.

Policies for the BA Degree with a Major in Environmental Science and a Major Concentration in Ecology and Evolutionary Biology

Transfer Credit

For Rice University's policy regarding transfer credit, see Transfer Credit (ga.rice.edu/undergraduate-students/academic-policies-procedures/transfer-credit). Some departments and programs have additional restrictions on transfer credit. The Office of Academic Advising maintains the university's official list of transfer credit advisors on their website: http://oaa.rice.edu. Students are encouraged to meet with their academic program's transfer credit advisor when considering transfer credit possibilities.

Program Transfer Credit Guidelines

Students pursuing the major in Environmental Science should be aware of the following program transfer credit guidelines:

- Requests for transfer credit will be considered by the program director (and/or the program's official transfer credit advisor) on an individual case-by-case basis.

For additional information, please see the Department of Earth, Environmental, and Planetary Sciences website, and specifically the Environmental Science major page, at: http://earthscience.rice.edu/academics/undergraduate-program/

Opportunities for the BA Degree with a Major in Environmental Science and a Major Concentration in Ecology and Evolutionary Biology

Academic Honors

The university recognizes academic excellence achieved over an undergraduate's academic history at Rice. For information on university honors, please see Latin Honors (ga.rice.edu/undergraduate-students/honors-distinctions/university) (summa cum laude, magna cum laude, and cum laude) and Distinction in Research and Creative Work (ga.rice.edu/undergraduate-students/honors-distinctions/university). Some departments have department-specific Honors awards or designations.

Independent Research

Students are encouraged to undertake independent research on environmentally related topics as part of their degree programs, in cooperation with one or more faculty. Course options for independent research, repeatable for credit, include: EBIO 403, EBIO 404, and ESCI 481.

Students also can enroll in senior honors thesis programs within their major concentrations, or by arrangement with other departments, and/or through the Rice Undergraduate Scholars Program. Students completing a thesis will also be eligible for the Distinction in Research and Creative Work, a university honor. Details for each program can be found here:
• EBI0 Honors Research
  (https://biosciences.rice.edu/Content.aspx?id=2147484071)

• ESCI Senior Honors Thesis
  (http://earthscience.rice.edu/academics/undergraduate-program/
   honors-thesis)

• Rice Undergraduate Scholars Program
  (https://ccl.rice.edu/students/learn/undergraduate-research/rice-
   undergraduate-scholars-program-rusp/)

For additional information, please see the Department of Earth,
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academics/undergraduate-program/