BACHELOR OF ARTS (BA) DEGREE WITH A MAJOR IN ENVIRONMENTAL SCIENCE AND A MAJOR CONCENTRATION IN EARTH SCIENCE

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 or application of the environmental sciences to other fields.
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 (https://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 23-24 courses (66-71 credit hours), depending on course selection, to satisfy major requirements.
- A minimum of 120 credit hours to satisfy degree requirements.
- A minimum of 4-6 courses (12-21 credit hours), depending on declared major concentration, taken at the 300-level or above.
- A capstone senior seminar requirement.
- The requirements of a major concentration. When students declare the major (https://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 (p. 3), or

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 where applicable, the department's Director of Undergraduate Studies. (Course substitutions must be formally applied and entered into Degree Works by the major's Official Certifier (https://registrar.rice.edu/facstaff/dregeworks/officialcertifier/). Students and their academic advisors should identify and clearly document the courses to be taken.

### Summary

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td></td>
<td>Total Credit Hours Required for the Major in Environmental Science</td>
<td>66-71</td>
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<td>Total Credit Hours Required for the BA Degree with a Major in Environmental Science</td>
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### Degree Requirements

#### Core Requirements

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<tr>
<th>Code</th>
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<td>BIOS 201</td>
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<td>BIOS 202</td>
<td>INTRODUCTORY BIOLOGY II</td>
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<td>BIOS 332</td>
<td>ECOLOGY</td>
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<td>CHEM 121</td>
<td>GENERAL CHEMISTRY I</td>
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<td>GENERAL CHEMISTRY LABORATORY I</td>
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<td>or CHEM 113</td>
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<td>or CHEM 112</td>
<td>AP/OTH CREDIT IN GENERAL CHEMISTRY II</td>
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<td>CHEM 124</td>
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<td>MATH 101</td>
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<td>or MATH 105</td>
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<td>MATH 102</td>
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<td>STAT 280</td>
<td>ELEMENTARY APPLIED STATISTICS</td>
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<td>or STAT 305</td>
<td>INTRODUCTION TO STATISTICS FOR BIOSCIENCES</td>
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<td>Core Courses 2</td>
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<tr>
<td>BIOS 213</td>
<td>INTRODUCTORY LAB IN ECOLOGY &amp; EVOLUTION</td>
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<td>ENST 100 / ARCH 105</td>
<td>ENVIRONMENT, CULTURE AND SOCIETY</td>
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<td>Any course from Earth, Environmental, and Planetary Sciences (EEPS) courses offerings at the 100-level (any course offerings between course numbers EEPS 100 and EEPS 199)</td>
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Bachelor of Arts (BA) Degree with a Major in Environmental Science and a Major Concentration in Earth Science

Field Experience

Select 1-2 courses from the following:

- EEPS 321: EARTH AND PLANETARY SURFACE ENVIRONMENTS
- EEPS 325: OCEANS, ATMOSPHERES AND CLIMATE

Major Concentration

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

- Earth Science
- Ecology and Evolutionary Biology

Advanced Electives

Select 1 course from the following:

- BIOS 316: LAB MODULE IN ECOLOGY
- BIOS 317: LAB MODULE IN BEHAVIOR
- BIOS 319: TROPICAL FIELD BIOLOGY
- BIOS 320: ECOLOGY AND CONSERVATION OF BRAZILIAN WETLANDS LABORATORY
- BIOS 327: BIOLOGICAL DIVERSITY
- BIOS 330: INSECT BIOLOGY LAB
- BIOS 337: FIELD BIRD BIOLOGY LAB
- EEPS 103: FIELD TRIPS FOR THE EARTH
- EEPS 309 / FOTO 390: VISUALIZING NATURE
- EEPS 334: THE EARTH LABORATORY
- EEPS 390: GEOLOGY FIELD CAMP
- EEPS 391: EARTH SCIENCE FIELD EXPERIENCE

Major Concentration

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

- Earth Science
- Ecology and Evolutionary Biology

Advanced Electives

Select 1 course from the following:

- BIOS 280: SUSTAINABLE DEVELOPMENT AND REPORTING
- BIOS 559: SUSTAINABILITY IMPACT ASSESSMENTS
- CEVE 302: SUSTAINABLE DESIGN
- CEVE 307: ENERGY AND THE ENVIRONMENT
- ENST 202: CULTURE, ENERGY, AND THE ENVIRONMENT: AN INTRODUCTION TO ENERGY HUMANITIES
- ENST 313 / ARCH 313: CASE STUDIES IN SUSTAINABLE DESIGN
- ENST 322 / ARCH 322: CASE STUDIES IN SUSTAINABILITY: THE REGENERATIVE REPOSITIONING OF NEW OR EXISTING RICE CAMPUS BLDGS
- ENST 368 / ENGL 368: LITERATURE AND THE ENVIRONMENT
- ENST 445: SEMINAR IN URBAN SUSTAINABILITY AND LIVABILITY RESEARCH METHODS AND APPLICATIONS
- ENST 446: LAB IN ENGAGED URBAN SUSTAINABILITY AND LIVABILITY RESEARCH
- HART 302: FROM THE SUBLIME TO THE SUSTAINABLE: ART, ARCHITECTURE AND NATURE
- HIST 321: US ENVIRONMENTAL HISTORY
- SPPO 411: LITERATURE AND THE ENVIRONMENT IN LATIN AMERICA

Natural Sciences and Engineering

Select 1 course from the following:

- CHBE 382: INNOVATION AND SUSTAINABILITY
- CHEM 211 & CHEM 213: ORGANIC CHEMISTRY I and ORGANIC CHEMISTRY DISCUSSION I
- ENST 250: UNDERSTANDING ENERGY: ENERGY LITERACY AND CIVICS
- ENST 307 / CEVE 307: ENERGY AND THE ENVIRONMENT
Bachelor of Arts (BA) Degree with a Major in Environmental Science and a Major Concentration in Earth Science

Major Concentration: Earth Science

Students must complete a total of 3 courses (minimum of 10-12 credit hours, depending on course selection) as listed below to satisfy the requirements for the major concentration in Earth Science.

**Elective Requirement**

Select at least 1 course from the following:

- Any course from Earth, Environmental, and Planetary Sciences (EEPS) courses offerings at the 300-level (or above) designated as Lecture in the course catalog
- EEPS 309 / FOTO 390 VISUALIZING NATURE
- EEPS 321 EARTH AND PLANETARY SURFACE ENVIRONMENTS
- EEPS 322 EARTH AND PLANETARY CHEMISTRY AND MATERIALS
- EEPS 323 EARTH AND PLANETARY STRUCTURE AND DYNAMICS
- EEPS 340 GLOBAL BIOGEOCHEMICAL CYCLES
- EEPS 417 TRACE-ELEMENT AND ISOTOPE GEOCHEMISTRY FOR EARTH AND ENVIRONMENTAL SCIENCE
- EEPS 420 ORGANIC GEOCHEMISTRY
- EEPS 426 GEOMORPHOLOGY
- EEPS 427 MECHANICS OF SEDIMENT TRANSPORT
- EEPS 429 PALEOCEANOGRAPHY
- EEPS 432 QUANTITATIVE HYDROGEOLOGY
- EEPS 436 GIS FOR SCIENTISTS AND ENGINEERS
- EEPS 467 GEOMECHANICS

**Footnotes and Additional Information**

1. Note: University Graduation Requirements include 31 credit hours, comprised of Distribution Requirements (Groups I, II, and III), FWIS, and LPAP coursework. In some instances, courses satisfying major requirements may additionally meet distribution requirements. Additional Credit Hours to Complete Degree Requirements include general electives, coursework completed as upper-level, residency (hours taken at Rice), and/or any other additional academic program requirements.

2. The Core Courses acquaint students with a range of environmental topics encountered by scientists, engineers, managers, and policy makers. Core Courses stress the components of the global environment and their interactions, culminating with a tropical seminar that integrates across the field.

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 Advanced Electives list, students may complete 1 course listed in the major concentration requirements outside of the student’s declared major concentration.

**Transfer Credit**

For Rice University’s policy regarding transfer credit, see Transfer Credit (https://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: https://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.

**Additional Information**

For additional information, please see the following websites:

- https://biosciences.rice.edu/
- https://earthscience.rice.edu/academics/undergraduate-program/

**Opportunities for the BA Degree with a Major in Environmental Science and a Major Concentration in Earth Science**

**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 (https://ga.rice.edu/undergraduate-students/honors-distinctions/university/) (summa cum laude, magna cum laude, and cum laude) and Distinction in Research and Creative Work (https://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: BIOS 401, BIOS 402, and EEPS 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:

- BIOS Honors Research (https://biosciences.rice.edu/research-overview)
- ESCI Senior Honors Thesis (https://earthscience.rice.edu/academics/undergraduate-program/honors-thesis)
- Rice Undergraduate Scholars Program (https://ouri.rice.edu/rusp)

**Additional Information**

For additional information, please see the following websites:

- https://biosciences.rice.edu/
- https://earthscience.rice.edu/academics/undergraduate-program/