Environmental Studies

Many of the most pressing challenges of the 21st Century are environmental ones. We must find ways to feed a growing human population while maintaining the natural life support system provided by the Earth’s ecosystems; to make built environments more efficient as urban areas continue to grow dramatically in size; and to meet the challenges posed by rising sea-level and increasing global temperatures. These challenges are complex, multifaceted and can best be solved with expertise from multiple, relevant disciplines. To prepare students to meet these challenges, the Institute at Brown for Environment and Society (IBES) offers two undergraduate degrees: an A.B. in Environmental Studies and a Sc.B. in Environmental Science. The two degrees vary primarily in the number of course requirements; the Sc.B. is a more in-depth treatment of a single field. Both degrees provide interdisciplinary exposure to the natural and social sciences, as well as public policy. Both degrees also develop depth in a primary field by requiring students to select one of four tracks of study. Concentrators might also consider pursuing the Engaged Scholars Program, which allows them to connect theory and practice and gain hands-on experience working with community partners.

Through a rigorous set of core courses, track requirements, and a course or project-based capstone experience, our students are primed to make meaningful contributions to environmental scholarship and outreach at local, national and global scales.

If you have administrative questions regarding theses concentrations or wish to be added to the email directory listing upcoming events, then please contact Jeanne Loewenstein (jeanne_loewenstein@brown.edu), the administrative manager.

Standard program in Environmental Studies and Environmental Science:

The Institute at Brown for Environment and Society administers two concentrations, one offering an A.B. degree in Environmental Studies (requires 14-15 courses) and the other a Sc.B. degree in Environmental Science (requires 19-20 courses). Below are a set of course offerings arranged into four tracks:

1. Air, Climate & Energy
2. Conservation Science & Policy
3. Land, Water & Food Security
4. Sustainability in Development

Requirements for the A.B. in Environmental Studies:

Core Requirements

- ECON 0110 Principles of Economics 1
- ENVS 0490 Environmental Science in a Changing World 2
- ENVS 0495 Introduction to Environmental Social Science
- BIOL 0210 Diversity of Life
- or GEOL 0240 Earth: Evolution of a Habitable Planet

Methods - one course

- ENVS 1920 Methods for Interdisciplinary Environmental Research

Electives - three courses

You may choose among any ENVS course, any course shown on one or more of the tracks, and any prerequisites listed for a required course.

Capstone - one or two courses

This requirement can be met with a two-semester thesis (ENVS 1970 and ENVS 1971), one or two semester practicum (ENVS 1970 and/or ENVS 1971), one-semester research project (ENVS 1970 or ENVS 1971), or an approved capstone course. Approved capstone courses are project-based senior seminars.

Track Specific Requirements

Track 1 - Air, Climate, and Energy

Climate: Select One

- GEOL 1350 Weather and Climate
- GEOL 1430 Principles of Planetary Climate

Physics:

- PHYS 0050 Foundations of Mechanics
- ENGN 1930U Renewable Energy Technologies
- PHYS 0114 The Science and Technology of Energy

Policy: Select One

- ENVS 1410 Environmental Law and Policy
- ENVS 1415 Power, Justice, and Climate Change
- ENVS 1530 From Locke to Deep Ecology: Property Rights and Environmental Policy
- ENVS 1575 Engaged Climate Policy at the UN Climate Change Talks
- ENVS 1615 Making Connections: The Environmental Policy Process
- ENVS 1755 Globalization and the Environment
- ENVS 1925 Energy Policy and Politics

Track 2 - Conservation Science and Policy

Ecology:

- BIOL 0420 Principles of Ecology
- BIOL 1470 Conservation Biology

Ecology & Conservation Topics: Select One

- ENVS 0455 Coastal Ecology and Conservation
- BIOL 1450 Community Ecology
- BIOL 1480 Terrestrial Biogeochemistry and the Functioning of Ecosystems

Policy: Select One

- ENVS 0510 International Environmental Law and Policy
- ENVS 1410 Environmental Law and Policy
- ENVS 1530 From Locke to Deep Ecology: Property Rights and Environmental Policy
- ENVS 1575 Engaged Climate Policy at the UN Climate Change Talks
- ENVS 1615 Making Connections: The Environmental Policy Process
- ENVS 1925 Energy Policy and Politics

Track 3 - Land, Water & Food Security

Climate: Select One

- GEOL 1350 Weather and Climate
- GEOL 1430 Principles of Planetary Climate

Biology: Select One

- BIOL 0210 Diversity of Life
- BIOL 0420 Principles of Ecology
- BIOL 0430 The Evolution of Plant Diversity
- ENVS 0455 Coastal Ecology and Conservation

Environmental History: Select One
ENVS 1530  From Locke to Deep Ecology: Property Rights and Environmental Policy  
HIST 1820A  Environmental History  
HIST 1976E  The Anthropocene: Climate Change as Social History  
Policy: Select One  
ENVS 0510  International Environmental Law and Policy  
ENVS 1350  Environmental Economics and Policy  
ENVS 1410  Environmental Law and Policy  
ENVS 1530  From Locke to Deep Ecology: Property Rights and Environmental Policy  
ENVS 1555  Urban Agriculture: The Importance of Localized Food Systems  
ENVS 1575  Engaged Climate Policy at the UN Climate Change Talks  
ENVS 1615  Making Connections: The Environmental Policy Process  
ENVS 1925  Energy Policy and Politics  
POLS 1740  Politics of Food  
Tools: Select One  
GEOL 1320  Introduction to Geographic Information Systems for Environmental Applications  
GEOL 1330  Global Environmental Remote Sensing  
SOC 1340  Principles and Methods of Geographic Information Systems  
Track 4 - Sustainability in Development  
Environment and Development: Select Two  
ECON 1410  Urban Economics  
ECON 1530  Health, Hunger and the Household in Developing Countries  
ENVS 1415  Power, Justice, and Climate Change  
ENVS 1555  Urban Agriculture: The Importance of Localized Food Systems  
ENVS 1580  Environmental Stewardship and Resilience in Urban Systems  
ENVS 1755  Globalization and the Environment  
Policy: Select Two  
ENVS 0510  International Environmental Law and Policy  
ENVS 1350  Environmental Economics and Policy  
ENVS 1410  Environmental Law and Policy  
ENVS 1530  From Locke to Deep Ecology: Property Rights and Environmental Policy  
ENVS 1575  Engaged Climate Policy at the UN Climate Change Talks  
ENVS 1615  Making Connections: The Environmental Policy Process  
ENVS 1925  Energy Policy and Politics  
Analysis Tools: Select One  
ECON 1620  Introduction to Econometrics  
ANTH 1940  Ethnographic Research Methods  
EDUC 1100  Introduction to Qualitative Research Methods  
GEOL 1320  Introduction to Geographic Information Systems for Environmental Applications  
GEOL 1330  Global Environmental Remote Sensing  
SOC 1100  Introductory Statistics for Social Research  
SOC 1117  Focus Groups for Market and Social Research  
SOC 1340  Principles and Methods of Geographic Information Systems  
Total Credits  

1 Students with AP scores of 4 or 5 in Macroeconomics plus a 4 or 5 in Microeconomics may place out of ECON 0110. Students who place out of ECON 0110 must substitute this course with an additional environmental elective.  
2 Concentrators with an AP score of 5 in Environmental Science may waive out of ENVS 0490. Students who place out of ENVS 0490 must substitute an additional environmental elective.  
3 Students pursuing the Sc.B. must take ECON 1620.

Requirements for the Sc.B. in Environmental Science:  
Requires ALL 14-15 course requirements as listed in the A.B. Program  

Additional Track specific requirements for the Sc.B.  

Track 1 - Air, Climate, and Energy  
Math: Select Both  
MATH 0090  Introductory Calculus, Part I  
MATH 0100  Introductory Calculus, Part II  
Environmental Economics: Select One  
ENVS 1350  Environmental Economics and Policy  
Advanced Climate: Select One  
GEOL 1510  Introduction to Atmospheric Dynamics  
GEOL 1520  Ocean Circulation and Climate  
Thermal/Chem: Select One  
ENGN 0720  Thermodynamics  
GEOL 1370  Environmental Geochemistry  

Track 2 - Conservation Science and Policy  
Math: Select One  
MATH 0090  Introductory Calculus, Part I  
Evolution: Select One  
BIOL 0480  Evolutionary Biology  
Organismal Diversity: Select One  
BIOL 0410  Invertebrate Zoology  
BIOL 0430  The Evolution of Plant Diversity (BIOL 0460 - Insect Biology)  
BIOL 0940C  Sophomore Seminar: Insect Biology  
BIOL 0940D  Rhode Island Flora: Understanding and Documenting Local Plant Diversity  
BIOL 1880  Comparative Biology of the Vertebrates  

Env. Econ: Select One  
ENVS 1350  Environmental Economics and Policy  
Tools: Select One  
GEOL 1320  Introduction to Geographic Information Systems for Environmental Applications  
GEOL 1330  Global Environmental Remote Sensing  
SOC 1340  Principles and Methods of Geographic Information Systems  

Track 3 - Land, Water & Food Security  
Math: Select One  
MATH 0090  Introductory Calculus, Part I  
Chemistry: Select One  
CHEM 0330  Equilibrium, Rate, and Structure  
Earth/Life Systems: Select Three  
BIOL 1470  Conservation Biology  
BIOL 1475  Biogeography  
BIOL 1480  Terrestrial Biogeochemistry and the Functioning of Ecosystems  
GEOL 0240  Earth: Evolution of a Habitable Planet  
GEOL 1130  Ocean Biogeochemical Cycles  
GEOL 1310  Global Water Cycle
GEOL 1370  Environmental Geochemistry  
GEOL 1510  Introduction to Atmospheric Dynamics  
GEOL 1660  Instrumental Analysis with Environmental Applications  

**Track 4 - Sustainability in Development**  

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<tr>
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<tbody>
<tr>
<td>SOC 1870K  Demographics and Development</td>
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<td>POLS 0400  Introduction to International Politics</td>
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<td>ENVS 1755  Globalization and the Environment</td>
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<td>AMST 1700I  Community Engagement with Health and the Environment</td>
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<td>ANTH 0110  Anthropology and Global Social Problems: Environment, Development, and Governance</td>
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<td>SOC 1871D  Sophomore Seminar in Sociology of Development</td>
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<th>Economic Perspectives: Select Two</th>
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<tr>
<td>ECON 1110  Intermediate Microeconomics</td>
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<td>ENVS 1355  Environmental Issues in Development Economics</td>
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<td>ECON 1510  Economic Development</td>
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<td>ECON 1530  Health, Hunger and the Household in Developing Countries</td>
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<td>ECON 1560  Economic Growth</td>
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<tr>
<td>GEOL 1350  Weather and Climate</td>
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**Total Credits**  

| 19-20 |

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1. Students with an AP exam of 4 or 5 on Calc AB may place out of MATH 0090. Students with an AP exam score of 4 or 5 on Calc BC may place out of MATH 0090 and MATH 0100. Students who place out of these courses must substitute an additional environmental elective.

**Honors**

Candidates for honors must have a minimum GPA of 3.3 in their concentration courses at the end of their 6th semester, and must have completed a successful thesis or practicum proposal. Students may apply during the first month of their 7th semester. Honors will be conferred upon the successful completion of the thesis or practicum.
Font Notice

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

- Helvetica was used instead of Arial.
- The editor may contact Leepfrog for a draft with the correct fonts in place.