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 these 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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Track 1</th>
<th>Track 2</th>
<th>Track 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 0110</td>
<td>Principles of Economics 1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ENVS 0490</td>
<td>Environmental Science in a Changing World 2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ENVS 0495</td>
<td>Introduction to Environmental Social Science</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 0210</td>
<td>Diversity of Life</td>
<td>1</td>
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<tr>
<td>or GEOL 0240</td>
<td>Earth: Evolution of a Habitable Planet</td>
<td>1</td>
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</table>

**Methods - one course**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Track 1</th>
<th>Track 2</th>
<th>Track 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVS 1920</td>
<td>Methods for Interdisciplinary Environmental Research</td>
<td>1</td>
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<td>1</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Track 1 - Air, Climate, and Energy</th>
<th>Track 2 - Conservation Science and Policy</th>
<th>Track 3 - Land, Water &amp; Food Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate: Select One</td>
<td>Ecology:</td>
<td>Climate: Select One</td>
</tr>
<tr>
<td>GEOL 1390 Weather and Climate</td>
<td>BIOL 0420 Principles of Ecology</td>
<td>GEOL 1350 Weather and Climate</td>
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<tr>
<td>GEOL 1430 Principles of Planetary Climate</td>
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<td>GEOL 1430 Principles of Planetary Climate</td>
</tr>
<tr>
<td>Physics:</td>
<td>Conservation:</td>
<td>Biology: Select One</td>
</tr>
<tr>
<td>ENVS 1410 Environmental Law and Policy</td>
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<td>ENGN 1930U Renewable Energy Technologies</td>
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<tr>
<td>ENVS 1415 Power, Justice, and Climate Change</td>
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<td>ENVS 0114 The Science and Technology of Energy</td>
</tr>
<tr>
<td>ENVS 1530 From Locke to Deep Ecology: Property Rights and Environmental Policy</td>
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<tr>
<td>ENVS 1575 Engaged Climate Policy at the UN Climate Change Talks</td>
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<tr>
<td>ENVS 1580 Environmental Stewardship and Resilience in Urban Systems</td>
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<tr>
<td>ENVS 1615 Making Connections: The Environmental Policy Process</td>
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<tr>
<td>ENVS 1755 Globalization and the Environment</td>
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<tr>
<td>ENVS 1925 Energy Policy and Politics</td>
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<tr>
<td>Sustainable Infrastructure: Select One</td>
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<tr>
<td>ENVS 0455 Coastal Ecology and Conservation</td>
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<td>BIOL 1450 Community Ecology</td>
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<td>ENVS 0510 International Environmental Law and Policy</td>
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<tr>
<td>BIOL 1480 Terrestrial Biogeochemistry and the Functioning of Ecosystems</td>
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<td>ENVS 1410 Environmental Law and Policy</td>
</tr>
<tr>
<td>Policy: Select One</td>
<td></td>
<td>ENVS 1530 From Locke to Deep Ecology: Property Rights and Environmental Policy</td>
</tr>
<tr>
<td>ENVS 1575 Engaged Climate Policy at the UN Climate Change Talks</td>
<td></td>
<td>ENVS 1580 Environmental Stewardship and Resilience in Urban Systems</td>
</tr>
<tr>
<td>ENVS 1615 Making Connections: The Environmental Policy Process</td>
<td></td>
<td>ENVS 1615 Making Connections: The Environmental Policy Process</td>
</tr>
<tr>
<td>ENVS 1925 Energy Policy and Politics</td>
<td></td>
<td>ENVS 1925 Energy Policy and Politics</td>
</tr>
<tr>
<td>Statistics: Select One</td>
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<tr>
<td>APMA 0650 Statistical Inference I</td>
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<tr>
<td>APMA 1650 Statistical Analysis of Biological Data</td>
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<tr>
<td>ENVS 1620 Introduction to Econometrics</td>
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</tr>
</tbody>
</table>

**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. 5

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**  

**Sociology and Politics: Select One**  
SOC 1870K  Demographics and Development  
POLS 0400  Introduction to International Politics  
ENVS 1755  Globalization and the Environment  

**Critical Perspectives on Development: Select One**  
AMST 1700I  Community Engagement with Health and the Environment  
ANTH 0110  Anthropology and Global Social Problems: Environment, Development, and Governance  
SOC 1871D  Sophomore Seminar in Sociology of Development  

**Economic Perspectives: Select Two**  
ECON 1110  Intermediate Microeconomics  
ENVS 1355  Environmental Issues in Development Economics  
ECON 1510  Economic Development  
ECON 1530  Health, Hunger and the Household in Developing Countries  
ECON 1560  Economic Growth  

**Climate: Select One**  
GEOL 1350  Weather and Climate  

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.