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. Environment & Inequality (New)
4. Land, Water & Food Security
5. Sustainability in Development

Requirements for the A.B. Degree

Core Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 0110</td>
<td>Principles of Economics</td>
<td>1</td>
</tr>
<tr>
<td>ENVS 0490</td>
<td>Environmental Science in a Changing World</td>
<td>1</td>
</tr>
<tr>
<td>ENVS 0495</td>
<td>Introduction to Environmental Social Science</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 0210</td>
<td>Diversity of Life</td>
<td>1</td>
</tr>
<tr>
<td>or GEOL 0240</td>
<td>Earth: Evolution of a Habitable Planet</td>
<td></td>
</tr>
<tr>
<td>ENVS 1920</td>
<td>Methods for Interdisciplinary Environmental Research</td>
<td>1</td>
</tr>
</tbody>
</table>

Methods - one course

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 & ENVS 1971), one-semester research project (ENVS 1970 or ENVS 1971), or an approved capstone course.

Track Specific Requirements

Track 1 - Air, Climate, and Energy

Climate: Select One

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 1350</td>
<td>Weather and Climate</td>
</tr>
<tr>
<td>GEOL 1430</td>
<td>Principles of Planetary Climate</td>
</tr>
</tbody>
</table>

Physics:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 0050</td>
<td>Foundations of Mechanics</td>
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Energy Technology: Select One

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ENGN 1930U</td>
<td>Renewable Energy Technologies</td>
</tr>
<tr>
<td>PHYS 0114</td>
<td>The Science and Technology of Energy</td>
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</table>

Policy: Select One

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVS 1415</td>
<td>Power, Justice, and Climate Change</td>
</tr>
<tr>
<td>ENVS 1575</td>
<td>Engaged Climate Policy at the UN Climate Change Talks</td>
</tr>
<tr>
<td>ENVS 1615</td>
<td>Making Connections: The Environmental Policy Process</td>
</tr>
<tr>
<td>ENVS 1755</td>
<td>Globalization and the Environment</td>
</tr>
<tr>
<td>ENVS 1925</td>
<td>Energy Policy and Politics</td>
</tr>
</tbody>
</table>

Sustainable Infrastructure: Select One

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVS 1400</td>
<td>Sustainable Design in the Built Environment</td>
</tr>
<tr>
<td>ENVS 1580</td>
<td>Environmental Stewardship and Resilience in Urban Systems</td>
</tr>
</tbody>
</table>

Track 2 - Conservation Science and Policy

Ecology:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>BIOL 0420</td>
<td>Principles of Ecology</td>
</tr>
</tbody>
</table>

Conservation:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1470</td>
<td>Conservation Biology</td>
</tr>
</tbody>
</table>

Ecology & Conservation Topics: Select One

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 0455</td>
<td>Coastal Ecology and Conservation</td>
</tr>
<tr>
<td>BIOL 1450</td>
<td>Community Ecology</td>
</tr>
<tr>
<td>BIOL 1480</td>
<td>Terrestrial Biogeochemistry and the Functioning of Ecosystems</td>
</tr>
</tbody>
</table>

Policy: Select One

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ENVS 1415</td>
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<td>Globalization and the Environment</td>
</tr>
<tr>
<td>ENVS 1925</td>
<td>Energy Policy and Politics</td>
</tr>
</tbody>
</table>

Statistics: Select One

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>APMA 0650</td>
<td>Essential Statistics</td>
</tr>
<tr>
<td>APMA 1650</td>
<td>Statistical Inference I</td>
</tr>
<tr>
<td>BIOL 0495</td>
<td>Statistical Analysis of Biological Data</td>
</tr>
<tr>
<td>ECON 1620</td>
<td>Introduction to Econometrics</td>
</tr>
</tbody>
</table>

Track 3 – Environment and Inequality (New)

Track Intro Course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ENVS 0705</td>
<td>Equity and the Environment; Movements, Scholarship, Solutions</td>
</tr>
</tbody>
</table>

Race, Class, and Gender Inequality: Select One

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRI 0090</td>
<td>An Introduction to Africana Studies</td>
</tr>
<tr>
<td>AFRI 0210</td>
<td>Afro Latin Americans and Blackness in the Americas</td>
</tr>
<tr>
<td>ECON 1370</td>
<td>Race and Inequality in the United States</td>
</tr>
<tr>
<td>ETHN 0500</td>
<td>Introduction to American/Ethnic Studies</td>
</tr>
<tr>
<td>ETHN 1039</td>
<td>History and Resistance in Representations of Native Peoples</td>
</tr>
<tr>
<td>GNSS 1600</td>
<td>Embodying Feminisms/Feminist Embodiments</td>
</tr>
<tr>
<td>HIST 1974J</td>
<td>Decolonizing Minds: A People's History of the World</td>
</tr>
</tbody>
</table>

Environmental Studies
Policy: Select Two

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
POLS 1925 Energy Policy and Politics

Tools: Select One

ANTH 0680 Anthropology of Food
ENVS 1910 The Anthropocene: The Past and Present of Environmental Change
HIST 1820A Environmental History

Policy: Select Two

ENVS 1350 Environmental Economics and Policy

Track 5 - Sustainability in Development

Policy: Select Two

ENVS 1350 Environmental Economics and 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
SOC 2610 Spatial Thinking in Social Science

Track 4 - 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 0410 Plants, Food, and People
BIOL 0420 Principles of Ecology
BIOL 0430 The Evolution of Plant Diversity
BIOL 0455 Coastal Ecology and Conservation

Environmental History: Select One

ANTH 0680 Anthropology of Food
ENVS 1910 The Anthropocene: The Past and Present of Environmental Change
HIST 1820A Environmental History

Policy: Select One

ENVS 1350 Environmental Economics and Policy

Environmental Studies

Math: Select Both

MATH 0090 Introductory Calculus, Part I
MATH 0100 Introductory Calculus, Part II
Environmental Studies

Track 1 - 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 0940D Rhode Island Flora: Understanding and Documenting Local Plant Diversity
Track 2 - Conservation Science and Policy (New)
Tools: Select One
- GEOL 1130 Global Environmental Remote Sensing
SOC 1340 Principles and Methods of Geographic Information Systems

Track 3 - Environment and Inequality (New)
Tools: Select One
- ANTH 1940 Ethnographic Research Methods
- ECON 1620 Introduction to Econometrics
- EDUC 1100 Introduction to Qualitative Research Methods
- 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
- SOC 2610 Spatial Thinking in Social Science

Race, Class and Gender Inequality: Select One
- ECON 1370 Race and Inequality in the United States
- ETHN 1039 History and Resistance in Representations of Native Peoples
- GNSS 1600 Embodying Feminisms/Feminist Embodiments
- HIST 1974J Decolonizing Minds: A People’s History of the World
- SOC 1270 Race, Class, and Ethnicity in the Modern World
- SOC 1872C Race and Ethnic Relations, Identity, and Inequality

SELECT A FOCUS AREA (pick three courses from only one focus area)

FOCUS ONE - Environmental Inequality in Globalization and Development: Select Three
- ENVS 1350 Environmental Economics and Policy
- Advanced Climate: Select One
- GEO 1510 Introduction to Atmospheric Dynamics
- GEO 1520 Ocean Circulation and Climate
- Thermal/Chem: Select One
- ENGN 0720 Thermodynamics
- GEOL 1370 Environmental Geochemistry

FOCUS TWO - Environmental Health and Inequality: Select Three
- ANTH 0110 Anthropology and Global Social Problems: Environment, Development, and Governance
- ECON 1355 Environmental Issues in Development Economics
- ECON 1510 Economic Development
- ECON 1530 Health, Hunger and the Household in Developing Countries
- ENVS 1415 Power, Justice, and Climate Change
- HIST 0150D Refugees: A Twentieth-Century History
- PHP 1070 The Burden of Disease in Developing Countries
- POLS 1730 Politics of Globalization
- SOC 0150 Economic Development and Social Change

FOCUS THREE - Environmental Inequalities in Food, Water, and Energy: Select Three
- ENVS 0710 Powering the Past: The History of Energy
- 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 1925 Environmental Policy, From the Ground Up
- PLCY 2555 Environmental Policy, From the Ground Up

Track 4 - 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
- BIOG 1475 Biogeography
- BIOG 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

Environmental Studies 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 1660</td>
<td>Instrumental Analysis with Environmental Applications</td>
</tr>
</tbody>
</table>

**Track 5 - 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
- ECON 1340 Economics of Global Warming
- ECON 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

1. The track requirement of MATH 0090 can be waived for students with an AP exam of 4 or 5 on Calc AB.
2. The ACE MATH 0090 and MATH 0100 track requirements can be waived for students with an AP exam score of 4 or 5 on Calc BC.

**Honors**

Students interested in graduating with honors in their concentration must complete a thesis determined to be of the highest quality and must have excelled in their coursework required for the concentration, which is defined here as receiving a grade of “A” in the majority of courses taken to fulfill the concentration. You can learn more by visiting the honors page [here](https://www.brown.edu/academics/institute-environment-society/education/undergraduate/honors) on the IBES website.
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.