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 five 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 academic program 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
4. Land, Water & Food Security
5. Sustainability in Development

Requirements for the A.B. Degree

Core Requirements
- ECON 0110 Principles of Economics
- ENVS 0490 Environmental Science in a Changing World
- 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 & 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

Foundational courses (choose two):
- CHEM 0330 Equilibrium, Rate, and Structure
- ENGN 0030 Introduction to Engineering
- GEOL 0220 Physical Processes in Geology
- PHYS 0050 Foundations of Mechanics

Climate (choose one):
- GEOL 0850 Weather and Climate
- GEOL 1430 Principles of Planetary Science

Policy (choose one):
- ENVS 0710 Powering the Past: Environmental Histories of Energy Use and Social Change
- ENVS 1415 Power, Justice, and Climate Change
- ENVS 1925 Energy Policy and Politics
- POLS 1822I Geopolitics of Oil and Energy

Track 2 - Conservation Science and Policy

Ecology:
- BIOL 0420 Principles of Ecology
- BIOL 1470 Conservation Biology

Ecology & Conservation Topics: Select One
- BIOL 0455 Coastal Ecology and Conservation
- BIOL 1450 Community Ecology
- BIOL 1480 Terrestrial Biogeochemistry and the Functioning of Ecosystems

Policy: Select One
- ENVS 1415 Power, Justice, and Climate Change
- 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 1755 Globalization and the Environment
- ENVS 1925 Energy Policy and Politics

Statistics: Select One
- APMA 0650 Essential Statistics
- APMA 1650 Statistical Inference I
- BIOL 0495 Statistical Analysis of Biological Data
- ECON 1620 Introduction to Econometrics

Track 3 – Environment and Inequality

Track Intro Course:
- ENVS 0705 - Equity and the Environment: Movements, Scholarship, Solutions

Race, Class, and Gender Inequality: Select One
- AFRI 0090 An Introduction to Africana Studies
- AFRI 0210 Afro Latin Americans and Blackness in the Americas
- ECON 1370 Race and Inequality in the United States
- ETHN 1000 Introduction to American/Ethnic Studies
### Track 4 - Land, Water & Food Security

**Climate: Select One**
- GEOL 0850 Weather and Climate
- GEOL 1430 Principles of Planetary Climate

**Biology: Select One**
- BIOL 0160 Plants, Food, and People
- BIOL 0210 Diversity of Life

**Tools: Select One**
- ENVS 0710 Powering the Past: Environmental Histories of Energy Use and Social Change
- ENVS 1415 Power, Justice, and Climate Change
- ENVS 1910 The Anthropocene: The Past and Present of Environmental Change

**Policy: Select Two**
- POLS 1730 Politics of Globalization
- URBN 1220 Planning Sustainable Cities
- URBN 1250 The Political Foundations of the City

### Track 5 - Sustainability in Development

**Environment and Development: Select Two**
- ECON 1410 Urban Economics
- ECON 1530 Energy Policy and Politics

**Analysis Tools: Select One**
- ECON 1620 Introduction to Econometrics
- GEOL 1320 Introduction to Geographic Information Systems for Environmental Applications

**Tools: Select One**
- ENVS 1580 Environmental Stewardship and Resilience in Urban Systems
- ENVS 1755 Globalization and the Environment

### Environmental History: Select One
- ANTH 0680 Anthropology of Food
- ENVS 1910 The Anthropocene: The Past and Present of Environmental Change

**Policy: Select One**
- ENVS 1925 Energy Policy and Politics

**Tools: Select One**
- ENVS 1105 Introduction to Environmental GIS
- GEOL 1320 Introduction to Geographic Information Systems for Environmental Applications
- GEOL 1330 Global Environmental Remote Sensing
- SOCS 1340 Principles and Methods of Geographic Information Systems

## Tools: Select One
- ANTH 1940 Ethnographic Research Methods
- ECON 1620 Introduction to Econometrics
- EDUC 1100 Introduction to Qualitative Research Methods
- ENVS 1105 Introduction to Environmental GIS
- GEOL 1320 Introduction to Geographic Information Systems for Environmental Applications
- GEOL 1330 Global Environmental Remote Sensing
- SOCS 1340 Principles and Methods of Geographic Information Systems

### Track 5 - Sustainability in Development

**Environment and Development: Select Two**
- ECON 1410 Urban Economics
- ECON 1530 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
- ENVS 1105 Introduction to Environmental GIS
- GEOL 1320 Introduction to Geographic Information Systems for Environmental Applications
- GEOL 1330 Global Environmental Remote Sensing
- SOCS 1100 Introductory Statistics for Social Research
Requirements for the Sc.B. Degree

**Track 1 - Air, Climate, and Energy**

Math:
- MATH 0090 Introductory Calculus, Part I

Policy (choose one):
- ENVS 1350 Environmental Economics and Policy
- ENVS 1415 Power, Justice, and Climate Change
- 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
- POLS 1822I Geopolitics of Oil and Energy

Tools (choose one):
- APMA 0650 Essential Statistics
- ECON 1620 Introduction to Econometrics
- ENVS 1105 Introduction to Environmental GIS
- GEOL 1320 Introduction to Geographic Information Systems for Environmental Applications
- GEOL 1330 Global Environmental Remote Sensing

Climate and Thermal Change (choose two):
- ENGN 0720 Thermodynamics
- ENGN 1720 Design of Thermal Engines
- ENGN 1930M Industrial Design
- GEOL 1370 Environmental Geochemistry
- GEOL 1510 Introduction to Atmospheric Dynamics
- GEOL 1520 Ocean Circulation and Climate

**Track 2 - Conservation Science and Policy**

Math: Select One
- MATH 0090 Introductory Calculus, Part I

Evolution: 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

Organismal Diversity: Select One
- ECON 1340 Economics of Global Warming
- ENVS 1350 Environmental Economics and Policy

Tools: Select One
- ENVS 1105 Introduction to Environmental GIS

**Track 3 - Environment and Inequality**

Tools: Select One
- ANTH 1940 Ethnographic Research Methods
- ECON 1620 Introduction to Econometrics
- EDUC 1100 Introduction to Qualitative Research Methods
- ENVS 1105 Introduction to Environmental GIS
- 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

Race, Class and Gender Inequality: Select One
- ECON 1370 Race and Inequality in the United States
- GNSS 1600 Embodying Feminisms/Feminist Embodiments
- ETHN 1200I History and Resistance in Representations of Native Peoples
- 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**
- ANTH 0110 Anthropology and Global Social Problems: Environment, Development, and Governance
- DEVL 1803R Caribbean and Pacific Small States: On the Margins of Development
- 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 1440 Security, Governance and Development in Africa
- POLS 1730 Politics of Globalization
- SOC 0150 Economic Development and Social Change

**FOCUS TWO - Environmental Health and Inequality: Select Three**
- AFRI 1060W Policy, Culture and Discourse that Shape Health and Access to Healthcare
- AMST 1700I Community Engagement with Health and the Environment

Environmental Studies
Environmental Studies

ANTH 1310 International Health: Anthropological Perspectives
BIOL 1820 Environmental Health and Disease
HIST 1960Q Medicine and Public Health in Africa
PHP 0320 Introduction to Public Health
PHP 1070 The Burden of Disease in Developing Countries
PHP 1530 Case Studies in Public Health: The Role of Governments, Communities and Professions
PHP 1700 Current Topics in Environmental Health
PHP 1710 Climate Change and Human Health
PHP 1920 Social Determinants of Health

FOCUS THREE - Environmental Inequalities in Food, Water, and Energy: Select Three
AMST 1906P Food in American Society and Culture
DEVL 1803R Caribbean and Pacific Small States: On the Margins of Development
ENVS 0710 Powering the Past: Environmental Histories of Energy Use and Social Change
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 Energy Policy and Politics
ETHN 1750B Treaty Rights and Food Fights: Eating Local in Indian Country

Total Credits 19-20

Track 4 - Land, Water & Food Security
Math: Select One
MATH 0090 Introductory Calculus, Part I 1
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 5 - Sustainability in Development
Sociology and Politics: Select One
ENVS 1755 Globalization and the Environment
POLS 0400 Introduction to International Politics
SOC 1870K Demographics and Development
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

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 (https://www.brown.edu/academics/institute-environment-society/education/undergraduate/honors) on the IBES website.

1 The track requirement of MATH 0090 can be waived for students with an AP exam of 4 or 5 on Calc AB.
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.