Environmental Studies (ENS)

Interdisciplinary Major and Living Learning Center Minor in Environmental Studies
Marine Sciences Research Center

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Faculty
Please see the faculty listing in the entry for the Atmospheric and Oceanic Sciences major.

The Environmental Studies major, leading to a Bachelor of Arts degree, is designed to provide students with the analytical and communication skills and the broad background necessary to understand and address complex environmental issues. The major also offers the opportunity for students to carry out focused study within a specific area of interest. Environmental issues are not resolved in the scientific, technological, social, or political area alone. The curriculum is, therefore, interdisciplinary and integrates principles and methodologies from the social sciences, engineering, the natural sciences, and humanities. The goal is to address the complex scientific, legal, political, socio-economic and ethical issues that define and surround environmental issues.

The major in Environmental Studies prepares the student for further education and entry-level employment in areas such as public interest science and advocacy, environmental conservation, law, journalism, management, television documentary production, ecotourism, population studies, and public service including public health.

To demonstrate depth of learning, an area of concentration is required of all students in the major. Additionally, a research course, an internship, or field study is an essential part of the curriculum to provide real-world experience in an appropriate subject area. Seniors are expected to share these experiences with the rest of the academic community through participation in an annual environmental studies colloquium.

The Environmental Studies major is administered by the Marine Sciences Research Center. A Living Learning Center and a minor, with a residential component, is also available, housed in Hendrix College. Students majoring or minoring in Environmental Studies are given priority housing in Hendrix College. A lounge and study area are also available within the Living Learning Center for commuter students enrolled in the major or minor. The Living Learning Center, which is part of the Science and Society College offers special programs, such as a seminar series showcasing faculty research and selected courses in the major and minor.

All students should consult with the director of undergraduate students to design and approve an acceptable course of study before declaring the major.

Courses Offered in Environmental Studies

See the Course Descriptions listing in this Bulletin for complete information.

ENS 101-E Prospects for Planet Earth
ENS 119-E Physics for Environmental Studies
ENS 301-H Contemporary Environmental Issues and Policies
ENS 311-H Ecosystem Ecology and the Global Environment
ENS 312-H Population, Technology, and the Environment
ENS 333 Environmental Law
ENS 443 Environmental Problem Solving
ENS 487 Independent Research in Environmental Studies
ENS 488 Internship in Environmental Studies

Requirements for the Major in Environmental Studies (ENS)

The major in Environmental Studies leads to the Bachelor of Arts degree. No more than one course required for the major can receive a letter grade less than C.

Completion of the major requires approximately 66 credits.

A. Foundation Courses (34 credits)

1. Natural Sciences
   - BIO 113 General Ecology
   - or BIO 150 The Living World
   - CHE 131, 133 General Chemistry and Lab (See Note 1)
   - MAT 125 or MAT 131 or MAT 141 Calculus
   - PHY/ENS 119 Physics for Environmental Studies (See Note 2)
   - One of the following:
     - GEO 101 Environmental Geology
     - or MAR 104 Oceanography
     - or ATM 102 Weather and Climate
     - or ENS 101 Prospects for Planet Earth

2. Social Sciences
   - ANP 120 Introduction to Physical Anthropology
   - ECO 108 Introduction to Economic Analysis
   - POL 102 Introduction to American Government

3. Humanities
   - PHI 104 Moral Reasoning
   - or PHI 105 Politics and Society

4. Communications
   - Proficiency in writing, oral communication, and computer literacy will be encouraged in all students. These skills will be developed within the context of formal coursework and no additional credits are required.

5. Upper-Division Writing Requirement
   - All students in the major must submit two papers from any upper division course in the major to the Director of Undergraduate Programs for evaluation by the end of the junior year.
B. Core Courses (20 credits)
1. BIO 201 Fundamentals of Biology: Organisms to Ecosystems
2. One of the following statistics courses:
   - AMS 102, AMS 110, AMS 310,
   - ECO 320, POL 201, PSY 201, or
   - SOC 202
3. MAR 340 Environmental Problems and Solutions
4. ENS 301 Contemporary Environmental Issues and Policies
5. ENS 311/BIO 386 Ecosystem Ecology and the Global Environment
6. ENS 312 Population, Technology, and the Environment
7. One of the following (2 credits):
   - ENS 443 Environmental Problem Solving
   - Independent Research (See Note 3)
   - Internship (See Note 4)

C. Concentration (12 credits)
All students in the major must complete an area of concentration consisting of four courses to develop depth of knowledge in a specific field of interest.
1. Archaeology
   - ANT 104 Introduction to Archaeology
   - ANT 357 The Agricultural Revolution
   - ANT 362 Long Island Archaeology
   - One additional upper-division archaeology course
2. Atmospheric Studies
   - ATM 265 Introduction to Atmospheric Science
   - ATM 237 Global Atmospheric Change
   - ATM 397 Air Pollution and its Control
   - MAR 334 Remote Sensing in the Environment
   - Other upper-division ATM courses (ATM 345, ATM 346, or ATM 348) may be substituted with permission of the undergraduate program director
3. Conservation/Physical Anthropology
   - ANP 210 The Living Primates
   - ANP 350 Primate Behavior and Ecology
   - ANP 360 Primate Conservation
   - MAR 315 Conservation Biology and Marine Biodiversity
4. Ecology
   - BIO 351 and 352 Ecology and Ecology Laboratory
   - BIO 353 Marine Ecology
   - BIO 354 Evolution or BIO 385 Plant Ecology
   - Other upper-division ecology or marine sciences courses (e.g., MAR 320 Limnology) may be substituted for BIO 353 and BIO 354/BIO 385 with permission of the undergraduate program director.
5. Environmental Economics
   - ECO 303 Intermediate Microeconomic Theory
   - ECO 305 Intermediate Macroeconomic Theory
   - ECO 373 Economics of the Environment and Natural Resources
   - One additional upper-division economics course by permission of the undergraduate director
6. Environmental History
   - HIS 103 American History to 1877 or HIS 104 United States since 1877
   - HIS 365 Environmental History of North America
   - HIS 398 Environment in World History
   - Additional upper-division history course with permission of undergraduate director (for example, AAS/HIS 353 Environmental History of China)

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Sample Course Sequence for the Major in Environmental Studies

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<th>Freshman Fall</th>
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<tr>
<td>ENS 101, MAR 104, GEO 101, or ATM 102</td>
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<td>MAT 125</td>
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<td>D.E.C.</td>
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<td>AMS 110 or other statistics</td>
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<td>Elective</td>
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<td>PHY 119</td>
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<td>Upper-Division concentration</td>
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<tr>
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<tr>
<td>Upper-Division elective</td>
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<tr>
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7. Environmental Law
   MAR/POL 333 Environmental Law
   POL 320 Constitutional Law and Politics
   POL 329 Administrative Law
   POL 366 Government Regulation of Business
Other upper-division courses (i.e., POL 351, POL 359, PHI 375) may be substituted for POL 366 with permission of the undergraduate program director.

8. Marine Environmental Studies
   MAR 333 Coastal Oceanography
   MAR 336 Marine Pollution
   MAR 315 Conservation Biology and Marine Biodiversity
   MAR 385 Principles of Fisheries Biology and Management
Other upper-division courses (BIO 343, 353; MAR 302, 304, 307, 308, 334, 339, 351, 366, 371, 390) may be substituted for MAR 315 and/or MAR 385 with permission of the director of undergraduate studies.

9. Public Policy
   POL 359 Public Policy Analysis
   POL 364 Organizational Decision Making
   POL 366 Government Regulation of Business
   PHI 364 Philosophy of Technology or PHI 366 Philosophy and the Environment
   One additional upper-division waste reduction or environmental policy course (with permission of the undergraduate director)

10. Waste Reduction and Management
    MAR 392 Waste Management Issues
    MAR/POL 333 Environmental Law
    BCP/MAR 394 Toxicology and Public Health

9. Environmental History
   HIS 103 or HIS 104
   HIS 365 Environmental History of North America
   HIS 398 Environment in World History
   One additional upper-division history course

Notes:
1. CHE 141, 143 Honors Chemistry and Lab may be substituted for CHE 131, 133
2. PHY 117, 118 or 121/123, 122/124 or 125, 126, 127 or 131/133, 132/134 or 141, 142 may be substituted for PHY/ENS 119.
3. Two credits of any course numbered 487 or equivalent with one of the following designators: ANP, ANT, ATM, BCP, BIO, CHE, ECO, ENS, EST, GEO, MAR, PHY, POL. In addition to other prerequisites, credit toward the major requires approval of the research topic by the Director of Undergraduate Studies of the Marine Sciences Research Center. A presentation at the annual senior colloquium is also required.
4. Two credits of any course numbered 488 or equivalent with one of the following designators: ANP, ANT, ATM, BCP, BIO, CHE, ECO, ENS, EST, GEO, MAR, PHY, POL. In addition to other prerequisites, credit toward the major requires approval of the internship by the Director of Undergraduate Studies. A presentation at the annual senior colloquium is also required.

Living Learning Center Interdisciplinary Minor in Environmental Studies

The Environmental Studies Living Learning Center, housed in Hendrix College (in the Science and Society College) offers a minor in Environmental Studies as well as activities that emphasize both scientific and social issues encompassed by the broad field of environmental studies. Through this program, motivated natural science and social science students are able to apply their other coursework specifically to the study of the environment. In addition, participation in the program adds an academic component to each student’s residential experience. The minor in Environmental Studies provides enhanced exposure to one subfield of environmental studies, the natural science of the environment.

Requirements for the Minor in Environmental Studies (ENS)

No more than one three-credit course in the minor may be taken under the Pass/No Credit option. All upper-division courses offered for the minor must be passed with a letter grade of C or higher. Completion of the minor requires 18 credits.
1. One introductory course chosen from the following:
   ATM/EST 102 Weather and Climate
   BIO 113 General Ecology
   BIO 201 Principles of Biology: From Organisms to Ecosystems
   GEO 101 Environmental Geology
   MAR 101 Long Island Sound: Science and Use
   MAR 104 Oceanography
2. ENS 101 Prospects for Planet Earth
3. ENS 301 Contemporary Environmental Issues and Policies
4. Two advanced courses chosen from the following:
   ANP 360 Primate Conservation
   ANT 420 Environmental Analysis Using Remote Sensing and Geographic Information Systems
   ATM 397 Air Pollution and Its Control
   BIO 351 Ecology
   BIO 352 Ecology Laboratory
   BIO/GEO 353 Marine Ecology
   CHE 310 Chemistry in Technology and the Environment
   GEO 304 Energy, Mineral Resources, and the Environment
   GEO 315 Groundwater Hydrology
   MAR 320 Limnology
   MAR 333 Coastal Oceanography
   MAR 340 Environmental Problems and Solutions
5. At least three credits of independent study or research in any department, approved by the minor coordinator or undergraduate director.

Declaration of the Minor

Students should declare the Environmental Studies minor no later than the middle of their junior year, at which time they should consult with the minor coordinator or undergraduate director and plan their course of study for fulfillment of the requirements.