## ENVIRONMENTAL SCIENCES MAJOR

The major in environmental sciences has two tracks: one in science and one in economic policy. The tracks share foundation courses in science and math and the core curriculum. Advanced coursework differs by track.

Students should plan their academic paths with an environmental sciences adviser soon after identifying their interests in the major. Foundation courses, many of which are prerequisites for advanced courses, should be completed as soon as possible. Students are encouraged (but not required) to take MATH 230-1 Multivariable Differential Calculus or the General Physics sequence PHYSICS 135-1, PHYSICS 135-2, PHYSICS 135-3, especially if they envision graduate training. Premedical students and students interested in advanced study in environmental biology are advised to take the full 200-level sequence in biological sciences and 2 additional quarters of organic chemistry.

Students must also complete the Undergraduate Registration Requirement ([https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement](https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement)) and the degree requirements of their home school.

### Course | Title
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**Program Courses (11 units)**
**3 core courses:**
- ENVR_SCI 201-0 Earth: A Habitable Planet
- ENVR_SCI 202-0 The Health of the Biosphere
- ENVR_SCI 203-0 Humans and the Environment
**8 advanced studies courses (see below) (p. 1)**

#### Foundations in Science and Math (Units depend on chemistry and mathematics sequences taken; courses may double-count with another major or a minor)

Students should complete all of the following courses in their first two years:

- MATH 220-1 Single-Variable Differential Calculus
- or MATH 218-1 and MATH 218-2 Single-Variable Calculus with Precalculus

- MATH 220-2 Single-Variable Integral Calculus
- or MATH 218-3 Single-Variable Calculus with Precalculus

- CHEM 110-0 Quantitative Problem Solving in Chemistry
- or CHEM 131-0 and General Chemistry 1
- or CHEM 141-0 and General Chemistry Laboratory 1
- & CHEM 132-0 and General Chemistry 2
- & CHEM 142-0 and General Chemistry Laboratory 2
- or CHEM 151-0 Accelerated General Chemistry 1
- or CHEM 161-0 and Accelerated General Chemistry Laboratory 1
- & CHEM 152-0 and Accelerated General Chemistry 2
- & CHEM 162-0 and Accelerated General Chemistry Laboratory 2
- or CHEM 171-0 Advanced General Inorganic Chemistry
- & CHEM 181-0 and Advanced General Inorganic Chemistry
- & CHEM 172-0 Laboratory
- & CHEM 182-0 and Advanced General Physical Chemistry
- or CHEM 191-0 and Advanced General Physical Chemistry Laboratory

5 courses chosen from the following, with at least 2 from the same group. (Chemistry and physics labs do not count toward the 5-course total.)

- BIOL_SCI 215-0 Genetics and Molecular Biology
- BIOL_SCI 217-0 Physiology
- BIOL_SCI 219-0 Cell Biology
- BIOL_SCI 220-0 Genetics and Molecular Processes Laboratory
- BIOL_SCI 221-0 and Cellular Processes Laboratory
- BIOL_SCI 222-0 and Investigative Laboratory

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### Advanced Studies Courses

See below for lists of approved science courses (p. 1) and environment and society courses (p. 2). See Environmental Sciences web page ([https://www.envsci.northwestern.edu/undergraduate/major-requirements.html](https://www.envsci.northwestern.edu/undergraduate/major-requirements.html)) for updates to these lists.

- At least 6 must be at the 300 level.
- Students in the science track choose 6 from the science list and 2 from the environment and society list.
- Students in the policy track take:

### Course | Title
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ECON 281-0 | Introduction to Applied Econometrics
ECON 310-1 | Microeconomics
ECON 371-0 | Economics of Energy
- or ECON 372-0 Environmental Economics
- or ECON 373-0 Natural Resource Economics

5 additional courses, including 4 from the science list

- Up to 2 ENV_RSCI 399-0 Independent Study research courses may be substituted for courses on the science list.
- Students who wish to double-major in Economics and Environmental Sciences are encouraged to do the science track in Environmental Sciences. Students doing the policy track must take extra 300-level economics classes to fulfill the requirements for both majors.

### Science List

### Course | Title
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ANTHRO 306-0 | Evolution of Life Histories
ANTHRO 312-0 | Human Population Biology
ANTHRO 314-0 | Human Growth & Development
ANTHRO 399-0 | Topics In Anthropology
BIOL_SCI 301-0 | Principles of Biochemistry
BIOL_SCI 332-0 | Conservation Genetics
BIOL_SCI 334-0 | Soils and the Environment: The Earth's Critical Zone
BIOL_SCI 336-0 | Spring Flora
BIOL_SCI 337-0 | Quantitative Methods for Ecology and Conservation
### Environmental Sciences Major

**Course** | **Title**
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ANTHRO 310-0 | Evolution and Culture
ANTHRO 383-0 | Environmental Anthropology
ANTHRO 390-0 | Topics in Anthropology 1
CIV_ENV 303-0 | Environmental Law and Policy
CIV_ENV 349-0 | Environmental Management
CIV_ENV 368-0 | Sustainability: The City
CIV_ENV 395-0 | Special Topics in Civil and Environmental Engrg 1
ECON 371-0 | Economics of Energy
ECON 372-0 | Environmental Economics
ECON 373-0 | Natural Resource Economics
ENVR_POL 390-0 | Special Topics in Environmental Policy and Culture
ENVR_POL 395-0 | Special Topics Seminar
GEOG 328-0 | The Human Use of the Earth
GBL_HLTH 302-0 | Global Health
HISTORY 200-0 | New Introductory Courses in History 1
HISTORY 300-0 | New Lectures in History 1
HISTORY 309-0 | American Environmental History
HISTORY 376-0 | Global Environments and World History
HISTORY 392-0 | Topics In History 1
HISTORY 395-0 | Research Seminar 1
ISEN 230-0 | Climate Change and Sustainability: Ethical Dimensions
ISEN 390-0 | Special Topics in Energy & Sustainability
PHIL 254-0 | Introduction to Philosophy of the Natural Sciences
PHIL 268-0 | Ethics and the Environment
PHIL 269-0 | Bioethics
PHIL 270-0 | Climate Change and Sustainability: Economic and Ethical Dimensions
POLL_SCI 329-0 | U.S. Environmental Politics
POLL_SCI 349-0 | International Environmental Politics
RELIGION 261-0 | American Religion, Ecology and Culture
SOCIOL 212-0 | Environment and Society
SOCIOL 276-0 | Introductory Topics in Sociology
SOCIOL 305-0 | Population Dynamics
SOCIOL 311-0 | Food, Politics and Society
SOCIOL 312-0 | Social Change and the Environment

1 Approved sections only.

### Honors in Environmental Sciences

Students with strong academic records and an interest in pursuing honors should approach a faculty member by the end of junior year to discuss possible projects; these may involve field, experimental, or computational research. Research is completed during 2 quarters of ENVR_SCI 399-0 Independent Study, which may count toward major requirements. Students then prepare a written thesis. Those whose theses and grades meet program criteria are recommended to the college for graduation with honors. For more information consult the program director and see Honors in the Major (https://catalogs.northwestern.edu/undergraduate/arts-sciences/#academicoptionstext).