

Environmental Science Major

www.geology.pitt.edu/undergraduate

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Environmental science is a multidisciplinary field that focuses on documenting the impacts that people have on our environment, on reducing the harmful effects of these impacts, and on restoring aspects of the environment to benefit both nature and people. Our program focuses on air, water, and the Earth's solid surface, and it includes an emphasis on their interactions with life.

The environmental science degree is a multidisciplinary program that combines physics, chemistry, math, biology, and geology to give you the skills and know-how needed to actually fix things. Careers range from the assessment, remediation, and protection of air and water resources to the restoration of disturbed landscapes to helping to ensure that major industries comply with environmental regulations. In addition, the environmental science program provides fine intellectual training in the tradition of a liberal arts education, which means that you will be exceptionally well-qualified to compete for the diverse jobs on offer at Pitt's career fairs.

There is considerable potential overlap between the environmental science and geology degrees. In short, if you like rocks, mountains, and the Earth's long history, do geology and pick classes with an environmental focus. If you don't like rocks, pick environmental science!

Required courses for the Environmental Science major

The environmental science major requires completion of a minimum of 63 credits distributed as follows.

Geology core requirements

One of the following courses

GEOL 0800 Geology
GEOL 0820 Natural Disasters
GEOL 0840 Intro to Environmental Science

All of the following courses

GEOL 0055 Physical Geology Lab
GEOL 1015 Geology Colloquium
GEOL 1030 Oceans, Atmosphere, and Climate
GEOL 1051 Groundwater Geology
GEOL 1060 Geomorphology
GEOL 1445 SIS, GPS, and Computer Methods for Earth Scientists
GEOL 1515 Environmental Geochemistry
GEOL 1904 Ecosystem Ecology

One of the following capstone courses

GEOL 1903 Internship
GEOL 1910 Undergraduate Thesis
GEOL 1960 Field Camp

Co-requirements

All of the following courses

CHEM 0110 General Chemistry 1
MATH 0220 Analytical Geometry and Calculus 1
PHYS 0174 Basic Physics for Science and Engineering 1

Three of the following courses

BIOSC 0150 Biology 1 plus BIOSC 0050 Biology Lab 1
BIOSC 0160 Biology 2 plus BIOSC 0060 Biology Lab 2
CHEM 0120 General Chemistry 2
MATH 0230 Analytical Geometry and Calculus 2
PHYS 0175 Basic Physics for Science and Engineering 2
STAT 1000 Applied Statistical Methods

Geology electives requirement

Students must complete nine credits of GEOL at the 1000 level or above. A list of eligible courses appears on the reverse side of this sheet.

Grade requirements: A minimum GPA of 2.0 in departmental courses is required for graduation.

Satisfactory/No Credit option: No GEOL course that counts toward the major can be taken on an S/NC basis. No more than two of the non-geological science courses that count toward the major may be taken on an S/NC basis.

Writing (W) requirement: Students must complete at least one W-course in the major.

Related area: A minimum of 12 credits is required in any one Dietrich School department chosen in consultation with the major advisor. The completion of an official Dietrich School minor or certificate or a UCIS certificate also satisfies this requirement.

GIS certificate: The Geographic Information Systems certificate is a great opportunity to earn electives while acquiring a range of software and image analysis skills (aerial photos, maps, and satellite images) that are highly sought after by both public and private employers. Refer to the [Geographic Information Systems Certificate Web page](#) for classes and more information.

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Checklist for the Environmental Science major

Geology core requirements

One of the following

- _____ GEOL 0800
- _____ GEOL 0820
- _____ GEOL 0840

All of the following

- _____ GEOL 0055
- _____ GEOL 1015
- _____ GEOL 1030
- _____ GEOL 1051
- _____ GEOL 1060
- _____ GEOL 1445
- _____ GEOL 1515
- _____ GEOL 1904

One capstone course

- _____ GEOL 1960
- _____ GEOL 1903
- _____ GEOL 1910

Co-requirements

All of the following courses

- _____ CHEM 0110
- _____ MATH 0220
- _____ PHYS 0174

Three of the following courses

- _____ BIOSC 0150 and BIOSC 0050
- _____ BIOSC 0160 and BIOSC 0160
- _____ CHEM 0120
- _____ MATH 0230
- _____ PHYS 0175
- _____ STAT 1000

Geology electives requirement

Students must complete nine credits of GEOL at the 1000 level or above. A list of eligible courses follows. Courses in bold type are recommended courses for Environmental Science majors.

- _____ GEOL 0060 History of the Earth
- _____ GEOL 1001 Mineralogy
- _____ GEOL 1003 Igneous and Metamorphic Petrology
- _____ GEOL 1020 Sedimentology and Stratigraphy
- _____ **GEOL 1052 Paleoclimatology**
- _____ GEOL 1055 Environmental Science, Ethics and Public Policy
- _____ GEOL 1056 UHC Environmental Science, Ethics, and Public Policy
- _____ GEOL 1100 Structural Geology
- _____ GEOL 1201 Marine Paleoecology
- _____ GEOL 1240 Evolution of the Vertebrates
- _____ **GEOL 1309 Aquatic Sedimentary Geochemistry**
- _____ **GEOL 1313 Scientific Communication for Environmental Professionals (writing intensive)**
- _____ **GEOL 1331 Health and Safety**
- _____ **GEOL 1410 Exploration Geophysics**
- _____ **GEOL 1446 Advanced Geographic Information Systems**
- _____ GEOL 1460 Remote Sensing of the Earth
- _____ GEOL 1701 Geology of the Planets
- _____ GEOL 1900 Internship
- _____ GEOL 1901 Independent Study
- _____ GEOL 1903 Undergraduate Research
- _____ GEOL 1904 Directed Reading
- _____ GEOL 1XXX Other upper-level class in GEOL, approved by the major advisor
- _____ **GEOL 2054 Soils: Geobiochemical Landscapes**
- _____ **GEOL 2525 Stable Isotopes**
- _____ **GEOL 2853 Watershed Hydrology and Biogeochemistry**
- _____ GEOL 2XXX Graduate level GEOL class, instructor permission required