

Geology Major

www.geology.pitt.edu/undergraduate

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Geology is a scientific discipline that aims to understand every aspect of modern and ancient Earth. A degree in geology provides the diverse skills required to work in many different employment settings. For example, the acquired scientific and mapping skills are great for jobs in parks and forestry management, museum work, science education, urban and suburban planning, and jobs that involve natural resource issues. Within the field of geology, environmental and geotechnical jobs exist for people with BS degrees. A master's degree provides better job opportunities in those fields, as well as in oil and gas exploration, which can be enormously rewarding both intellectually and financially. A PhD provides additional employment options, especially in universities and government labs. Internships enable students to meet potential employers, learn about real world opportunities, and sample different types of work.

Geology deploys an interdisciplinary mix of physics, chemistry, biology, math, and natural science to understand the mysteries of nature. It focuses on the solid Earth (rocks, minerals, mountain belts, volcanoes, earthquakes, sedimentary basins, oil and gas deposits, etc.) as well as the history of life (paleontology) and its impact on the Earth. In recent decades, geologists have become increasingly concerned with the history of the Earth's climate, how the physical and chemical behavior of the oceans has changed over time, and how drifting continents and evolving life have interacted to control the composition of the atmosphere and oceans and hence to control global climate. Geologists also examine how human activities affect our environment, including the quality of air, water, and soil.

Geology majors have hiked the Appalachian Trail, gone backpack camping with at-risk youth in the Utah deserts, bicycled across North America, plumbed the depths of unexplored caves, and traveled to Mongolia in pursuit of summer research. Geology majors take a six week summer field camp that features extensive hiking in the western U.S., Italy, New Zealand, or other places around the world. To see whether geology is a good major for you, try a geology class (GEOL 0040, 0800, or 0860) and the Physical Geology Lab (GEOL 0055). Make sure you are comfortable with the required chemistry, math, and physics courses.

Required courses for the Geology major

The geology major requires the completion of 67 credits distributed as follows.

Geology core requirements

One of the following

GEOL 0040 Physical Geology
GEOL 0800 Geology
GEOL 0860 Environmental Geology

All of the following

GEOL 0055 Physical Geology Lab
GEOL 0060 History of the Earth
GEOL 1001 Mineralogy
GEOL 1003 Igneous and Metamorphic Petrology
GEOL 1020 Sedimentology and Stratigraphy
GEOL 1100 Structural Geology
GEOL 1960 Field Camp
GEOL 3900 Topics in Geology: Colloquium

Geology elective requirement

Students must complete nine credits of GEOL at the 1000 level or above.

Chemistry requirements

CHEM 0110 General Chemistry 1
CHEM 0120 General Chemistry 2

Mathematics requirements

MATH 0220 Analytic Geometry & Calculus 1 and
MATH 0230 Analytic Geometry & Calculus 2 or
MATH 0235 Honors Variable Calculus

Additional requirement; one of the following

MATH 0240 Analytic Geometry & Calculus 3
MATH 0250 Matrix Theory & Differential Equations
STAT 1000 Applied Statistical Methods

Physics requirements

PHYS 0174 Basic Physics for Science and Engineering 1
PHYS 0175 Basic Physics for Science and Engineering 2

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: Mathematics satisfies the related area requirement for the geology major.

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 Geology major

Geology core requirements

One of the following

_____ GEOL 0040
_____ GEOL 0800
_____ GEOL 0860

All of the following

_____ GEOL 0055
_____ GEOL 0060
_____ GEOL 1001
_____ GEOL 1003
_____ GEOL 1020
_____ GEOL 1100
_____ GEOL 1960
_____ GEOL 3900

Geology elective requirement

_____ GEOL _____ (1000 level or above)
_____ GEOL _____ (1000 level or above)
_____ GEOL _____ (1000 level or above)

Chemistry requirements

_____ CHEM 0110 **or** CHEM 0710 (UHC)
_____ CHEM 0120 **or** CHEM 0720 (UHC)

Mathematics requirements

_____ MATH 0220
_____ MATH 0230 **or** MATH 0235 (UHC)

One of the following

_____ MATH 0240
_____ MATH 0250
_____ STAT 1000

Physics requirements

_____ PHYS 0174 **or** PHYS 0475 (UHC)
_____ PHYS 0175 **or** PHYS 0476 (UHC)