GEOLOGY, GENERAL GEOLOGY CONCENTRATION (BS IN GEOLOGY)

The Geology Program

The program of the Department of Geology provides each major with a strong broad-based education in earth & environmental sciences with flexibility for students to pursue their own interests. The major may choose one of two options, either general geology or environmental geology. Independent research experiences are an integral part of both options designed as a capstone experience where students develop transferrable and marketable skills. The Geology curriculum stresses quantitative methods in the laboratory, data-driven approaches to problem-solving, and place-based learning and training. Geology majors have access to field class and research experiences historically ranging from Virginia's coastline to the Blue Ridge, Hawaii, California, Alaska, and the Colorado Plateau in the United States, and Scotland, Norway, and Oman abroad.

Geology majors are prepared for careers in environmental consulting, water resources, oil, gas, & mineral exploration, geotechnical work, natural hazards, climate and sustainability, the renewable energy sector, GIS/data analysis, education, and government or nonprofit science agencies. This training also provides a strong foundation for graduate or professional study in geology, environmental science, engineering, risk management, public policy, law, science communication, or related applied fields.

Course Requirements

Code	Title	Hours
Introductory Sequence		
Select one of the following options:		4-5
GEOL 101 & GEOL 160	The Dynamic Earth: Physical Geology and Investigating the Earth: Introductory Geology Laboratory	
GEOL 110 & GEOL 160	Earth's Environmental Systems: Physical Geography and Investigating the Earth: Introductory Geology Laboratory	
GEOL 150 & GEOL 160	First-Year Seminar and Investigating the Earth: Introductory Geology Laboratory	
GEOL 250	Geologic Evolution of VA	
Core Courses		
GEOL 321	Rock-Forming Minerals	4
GEOL 323	Earth Structure & Dynamics	4
Select at least one course from Group A:		3-4
GEOL 315	Hydrology	
GEOL 316	Environmental Geochemistry	
GEOL 320	Earth Surface Processes	
GEOL 327	Igneous and Metamorphic Petrology	
Select at least one course from Group B:		3-4
GEOL 322	The Sedimentary Record	
GEOL 324	Paleoclimatology & Paleoceanography	
GEOL 325	Paleontology	
Select two to four additional credits from Group A and B:		2-4
GEOL 324	Paleoclimatology & Paleoceanography	
GEOL 325	Paleontology	
GEOL 327	Igneous and Metamorphic Petrology	
GEOL 315	Hydrology	
GEOL 316	Environmental Geochemistry	
GEOL 320	Earth Surface Processes	
GEOL 322	The Sedimentary Record	
Research		
GEOL 404	Introduction to Geological Research	1
Select one of the following:		4-6
GEOL 491 & GEOL 492	Senior Research and Senior Research	
GEOL 495 & GEOL 496	Honors and Honors	
Elective Courses		
Select nine credits from the following:		9
GEOL 203	Age of Dinosaurs	
or GEOL 207	Planetary Geology	
or GEOL 212	Global Climate Change	
GEOL 305	Environmental Geology	
GEOL 310	Regional Field Geology	
GEOL 311	Field Methods in the Earth Sciences	
GEOL 314	Watershed Dynamics	
GEOL 424	Sedimentology Seminar	
GEOL 425	Structural Geology Seminar	
GEOL 426	Paleobiology Seminar	
GEOL 428	Geochemistry Seminar	
GEOL 429	Hydrology Seminar	
GEOL 437	Special Topics Seminar	
GIS 201	Introduction to Geographic Information Systems and Spatial Analysis	
MSCI 305	Coastal and Marine Geology	
Additional courses from Group A and B can also be used for elective credits. [1]		
Additional Requirements		
Select two of the following: [2]		8
CHEM 103 & 103L	General Chemistry I and General Chemistry Lab I	
CHEM 206 & 206L	Organic Chemistry I and Organic Chemistry Lab I	
CHEM 208 & CHEM 254	General Chemistry II and Introduction to Inorganic Chemistry and General Chemistry Laboratory II	
PHYS 101 & 101L	General Physics-Lecture and General Physics-Lab	
PHYS 102 & 102L	Gen Physics-Lecture and General Physics-Lab	
Total Hours		**42-49**

Major Computing Requirement

Fulfilled by completing the Research requirement outlined below.

Major Writing Requirement

Fulfilled by completing the Research requirement outlined below.

[1] nly one of the following courses can be used to count towards the major: GEOL 203 Age of Dinosaurs or GEOL 207 Planetary Geology or GEOL 212 Global Climate Change.

[2] These courses are required but do not count towards the minimum 36 credits in Geology. Geology majors, especially those planning on pursuing advanced degrees, are strongly recommended to take one year of calculus, one year of chemistry, one year of physics, and a field camp.