

2009-2010

B.S. in Geology

College of Sciences and Technology

What Is the Study of Geology?

A geoscientist is someone who studies the Earth's physical makeup and history. Geology is the science that provides the key to finding new sources of useful Earth materials and to understanding Earth processes that affect our lives. Geoscientists provide basic information to society for solving problems and establishing policy for resource management, environmental protection, public health, safety and welfare.

Geoscientists are curious about the Earth. How was it formed? How is it changing? What effects will shrinking glaciers have on the oceans and climate? How do islands form? What makes a continent move? Why did the dinosaurs become extinct? What makes a mountain?

Geoscientists are concerned about the Earth. Is there a global warming trend? How and where should we dispose industrial wastes? How can we fill society's growing demands for energy and conserve natural resources for future generations?

Geoscientists enjoy the Earth. It is an outdoor laboratory filled with opportunities to observe Earth processes in action. By applying knowledge of forces that shape the Earth, Geoscientists seek to reconstruct the past and anticipate the future.

Why Should I Consider This Major?

Do you like to know why and how things work? Do you enjoy the outdoors? Are you concerned about the environment? Are you interested in travel? Do you like to analyze things? Are science and nature among your favorite subjects? Have you ever wondered why the Earth appears as it does? If you answer "yes" to most of these questions the Geosciences could offer a good career for you.

How to Declare:

You may declare your Geology major upon completion of GEOL 211. Come to the Geology Office, ES 240, to declare your major. You will be assigned a Geology faculty advisor at that time.

Mid-Program Checkpoint:

Students intending to complete a Bachelor's of Arts degree in Geology within four years should complete the following courses by the start of their junior year. Students are expected to follow all prerequisite requirements for courses and seek early departmental advisement.

Coursework:

GEOL 211, 212

CHEM 121, 122, 123

MATH 124, 125

PHYS 121, 122

Other Activities:

Declare your Geology major.

Meet with your Geology faculty advisor.

If you want to do senior research, find an advisor and a project.

Contact Information:

Geology Department Website:
<http://geology.wvu.edu>

Department Chair:
Scott Babcock
ES 240A, 360-650-3592
babcock@wvu.edu

Undergraduate Advisor:
Vicki Critchlow
ES 240, 360-650-3582
critch@geol.wvu.edu

Sample Careers:

U.S. Geological Survey
Department of Natural Resources

Oil Exploration

Mining Geologist

NASA

U.S. Forest Service



B.S. in Geology Major Requirements: 96-106 Credits

Geology Core

GEOL 211 Physical Geology (5)
GEOL 212 Historical Geology (4)
GEOL 213 GIS in Geology (3)
GEOL 306 Mineralogy (4)
GEOL 310 Geomorphology (5)
GEOL 318 Structural Geology (5)
GEOL 352 Geophysics (4)
GEOL 406 Igneous and Metamorphic Petrology (4)
GEOL 409 Field methods and Theory (6)
GEOL 410 Geologic Mapping (6)
GEOL 415 Stratigraphy & Sedimentation (4)
CHEM 121, 122, 123 General Chemistry I, II, III (5, 5, 4)
MATH 124 Calculus and Analytic Geometry I (5)
 Or MATH 134 Honors Calculus I (5)
MATH 125 Calculus and Analytic Geometry II (5)
 Or MATH 135 Honors Calculus II (5)
Note: MATH 138 (5) can substitute for the 124/134 or 125/135 set.
PHYS 121 Physics with Calculus I/lab (5)
PHYS 122 Physics with Calculus II/lab (5)

Geology Concentration (96-106):

Core Courses

GEOL 316 Research in Marine Paleontology (4)
GEOL 407 Advanced Petrography (3)

One of:

MATH 203 Elementary Linear Algebra (4)
MATH 224 Multivariable Calculus and Geometry (5)
MATH 341 Probability and Statistics (4)

Two Geology electives from:

GEOL 411, 423, 424, 425, 428, 430, 449, 450, 451, 454, 456, 463

* Or substitute courses under advisement

Geology Concentration—Thesis Option (97-105):

Core Courses

GEOL 316 Research in Marine Paleontology (4)
GEOL 407 Advanced Petrography (3)

One of the following—with consultation with advisor:

GEOL 411, 423, 424, 425, 450, 454, 456, 463

Successful application to the department approving the thesis topic

Complete at least 4 credits of GEOL 490

Environmental Geology Concentration (99-105):

Core Courses

GEOL 314 Engineering Geology (3)
GEOL 473 Groundwater Hydrology (4)

One of the following:

MATH 203 Elementary Linear Algebra (4)
MATH 224 Multivariable Calculus and Geometry (5)
MATH 341 Probability and Statistics (4)

8-9 additional credits chosen from:

GEOL 413, 430, 440, 449, 450, 451, 452, 461, 462, 470, 472, 474

Environmental Geology Concentration – Thesis Option (96-105):

Core Courses, with exception that one of GEOL 442, 447, 448 is waived

GEOL 314 Engineering Geology (3)
GEOL 473 Groundwater Hydrology (4)

One of the following—

MATH 203 Elementary Linear Algebra (4)
MATH 224 Multivariable Calculus and Geometry (4)
MATH 341 Probability and Statistical Inference (4)

One of the following—with consultation with advisor

GEOL 413, 430, 440, 450, 451, 452, 461, 462, 470, 472, 474

Successful application to the department approving the thesis topic

Complete at least 4 credits of GEOL 490

Geophysics Concentration (98-105) :

Core Courses

GEOL 452 Applied Geophysics (5)

One or more of the following: GEOL 453, 456, 457, 463

One or more of the following: GEOL 449, 450, 451, 454, 472, 473 or 4 additional credits from the Math or Physics courses listed below.

8 additional credits selected from: MATH 203, 224, 225, 331, PHYS 123, 223, 233, 363

Geophysics Concentration – Thesis Option (98-106):

Core Courses

GEOL 452 Applied Geophysics (5)

At least one of the following: GEOL 449, 450, 451, 453, 472, 473 or four additional credits from Math or Physics, listed below:

One of the following: MATH 204, 224, 225, 331, PHYS 123, 223, 233, 363; or

One of the following: GEOL 454, 456, 457, 463

Successful application to the department approving the thesis topic

Complete at least 4 credits of GEOL 490

Other Geology Options:

B.S. in Geology—Thesis Option (97-102 credits)

B.A. in Geology (75 credits)

B.A. in Geology with Thesis Option (73-81 credits)

B.A. Ed. in Elementary Earth Science (75-77 credits)

B.A. Ed. in Secondary Earth Science (86-88 credits)

B.A. Ed. in Secondary Earth Science/General Science (107-108 credits)

Minor in Geology (25 credits)

These courses are offered within this major and may be used to satisfy GUR or Writing Proficiency requirements.

QSR: MATH 124

LSCI: GEOL 211, 212

CHEM 121

PHYS 121, 122

WP: Three Writing Proficiency points are required for graduation (they are noted as WP1, WP2, and WP3). Check [Classfinder](#) or [Online Timetable](#) for departmental offerings each quarter.