

2009-2010

# *B.A.Ed. in Earth Science - Secondary*

**Woodring College of Education  
College of Sciences and Technology**

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## *What Is the Earth Science-Secondary Major?*

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? Would you like to share this information with middle or high school students? 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 Earth Science–Secondary major upon completion of GEOL 211, 212, CHEM 121, and MATH 115. 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 in Education degree in Earth Science-Secondary 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, 214, 310  
CHEM 121, 122  
MATH 114, 115  
PHYS 114, 115

### **Other Activities:**

Visit the department and talk with students and faculty about majoring.

### *Contact Information:*

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

Geology Undergraduate  
Advisor:  
Vicki Critchlow  
ES 240, 360-650-3582  
[critch@geol.wvu.edu](mailto:critch@geol.wvu.edu)

Education Advisors:  
Scott Linneman  
ES 340, 360-650-7207  
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Susan DeBari  
ES 237, 360-650-3588  
[debari@geol.wvu.edu](mailto:debari@geol.wvu.edu)

### *Sample Careers:*

Secondary Education  
Teacher (Grades 5-12)



# Earth Science-Secondary Major Requirements: 74-90 Credits

This program must be accompanied by the professional preparation program in secondary education. See the *Secondary Education* section of the Catalog for program admission, completion, and teacher certification requirements. This major leads to recommendation for teaching endorsements in Earth & Space Science and Science.

GEOL 211 Physical Geology with Lab (5)

Or 211a Physical Geology Review (2)

GEOL 212 Historical Geology (4)

GEOL 213 GIS in Geology (3)

GEOL 252 The Earth and its Weather (4)

GEOL 310 Geomorphology (5)

GEOL 311 Earth Materials (4)

Or GEOL 306 Mineralogy (4) and GEOL 406 Petrology (4)

GEOL 340 Geological Oceanography (3)

ASTR 103 Introduction to Astronomy (4)

Or ASTR 113 Sun, Moon, and Planets (3)

CHEM 121 General Chemistry I (5)

CHEM 122 General Chemistry II (5)

MATH 114 Precalculus I (5)

MATH 115 Precalculus II (5)

Or MATH 124 Calculus & Analytic Geometry (5)

MATH 240 Introduction to Statistics (4)

PHYS 114 Principles of Physics I (5)

PHYS 115 Principles of Physics II (5)

SCED 370 Science and Society (3)

SCED 481 Fundamentals of Teaching Science (2)

SCED 491 Methods in Secondary Education for Science Teachers (5)

## Electives: choose two of the Following:

GEOL 308 Earthquake Geology (3)

GEOL 309 Volcanology (3)

GEOL 314 Engineering Geology (3)

GEOL 316 Research in Marine Paleontology (4)

GEOL 318 Structural Geology (5)

GEOL 407 Advanced Petrography (3)

GEOL 414 Geology of Washington (3-5)

GEOL 415 Stratigraphy and Sedimentation (4)

GEOL 430 Image Interpretation (3)

GEOL 440 Glacial Geology (4)

It is recommended that this major be accompanied by a minor in chemistry, physics or biology.

## Other Geology Options:

B.A. in Geology (73 credits plus a science minor)

B.A. in Geology–Thesis Option (63-81 credits)

B.S. in Geology (94-112 credits)

B.A.Ed. Earth Science–Elementary (75-77 credits plus certification)

B.A.Ed. Earth Science/General Science (107-108 credits plus certification)

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 114, 115

**LSCI:** GEOL 211, 212; CHEM 121, 122, 123;  
PHYS 115, 116 or 121, 122, 123

**SCI:** GEOL 214; PHYS 114; ASTR 103

**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.