



Credit Hours: 4

Catalog Course Description:

This course focuses upon the earth's structure, function physical processes, and location in space. Emphasis is given to the external and internal forces that mold the face of the earth and its atmosphere.

How Program Site Will Be Incorporated into the Course:

As a geological destination, Peru offers so much to the student interested in Earth processes and phenomena. One of the longest mountain ranges in the world is home to both glaciers and volcanoes. The world's greatest earthquake occurred in neighboring Chile, but Peru has had some impressive temblors, as well. Seafloor sediments can be examined at elevations above 10,000 feet. This country offers up a wealth of geological treasure to complement its cultural treasures, many of which owe their very existence to the geology of the region. Students on this trip will explore the threads irrevocably binding this country and its people together for millennia.

Prerequisites: None

Textbook/Online and Other Requirements:

Essentials of Geology, S. Marshak, 3rd edition

Colored pencils

Journal for daily use

Canvas bag for samples

Hand magnifier

I. Week / Unit / Topic Basis:

Week 1	Introduction to Geology & Earth Science; Rocks and Minerals
Week 2	Plate Tectonics; Earthquakes & Volcanism
Week 3	Geologic Time & Human History
Week 4	Glacial & Arid Landscapes; Origin of the Andes
Week 5	[Origin of the Andes]

II. Course Objectives:

- A. List and understand the sciences traditionally included in Earth science, summarize some of the relationships between people and the natural environment, and give examples of ways in which the different Earth sciences apply.
- B. Explain the difference between minerals and rocks, and identify at least one of each kind while studying in Peru.

- C. Diagram the rock cycle and discuss the geologic processes and energy sources that contribute to each rock group, and demonstrate understanding of the importance of rocks and how their characteristics provide clues to geologic events and as indicators for exploration of metallic and nonmetallic mineral resources.
- D. Discuss the Theory of Plate Tectonics and examine its many applications to the landscapes of Peru, South America, and the world as well as its many implications for Peru and the other countries dominated by the Andes Mountains.
- E. Explain earthquakes as natural hazards and list other destructive phenomena related to earthquakes. Identify the various types of volcanic phenomena.
- F. Give the definitions of numerical and relative dating and apply relative dating techniques to understand how scientists have been able to reconstruct Peru's geological history.
- G. Define the key term glacier, including examples of different types and the locations where they are found, then describe the features produced by glacial erosion and deposition.
- H. Explore human impact on climate and recognize consequences of global climate change, especially the ways Peru might be affected by rising temperatures.

III. Instructional Processes:

Students will:

1. Interpret rock and mineral samples at each location, sketching them and applying the methods for field-testing for identification. This will afford opportunities for classification of samples and interpretation of the area of study by using the rock cycle sketches they will create
2. Apply basic geological principles to appraisals of differing landscapes in order to write in journals about the things they are seeing , and support their interpretations with information from various sources, including museums, videos, local guides/interpreters, and our textbook
3. Evaluate geological features and hazards associated with the areas of study and construct maps depicting such features
4. Develop powerpoint presentations which graphically illustrate the application of knowledge gained while traveling to the different cities and sites in Peru. These powerpoints will be visual records of things seen and done and will afford students the opportunity to apply information acquired to visual examples of physical and cultural features encountered

IV. Expectations for Student Performance:

Upon successful completion of this course, the student should be able to:

1. Discuss the ways in which the various Earth sciences are expressed in the cultures of Peru historically and today, i.e., summarize some of the relationships between people and the natural environment by giving examples of adaptation, utilization, and exploitation
2. Perform simple field tests on rock or mineral hand samples in order to make educated guesses about what they are in order to evaluate a collection site and area

3. Diagram the rock cycle and discuss the geologic processes and energy sources that contribute to each rock group, and explain the difference between a rock and a mineral. Students should also be able to tie these ideas to the history of the country by discussing the ores and the mining industries of yesterday and today
4. Explain the differences among divergent, convergent, and transform plate boundaries, including the major processes that occur at these boundaries and the implications of these to world populations, focusing on the people of Peru
5. Demonstrate an understanding of the causes of earthquakes and using a Peruvian quake as an example, explain the many forces at work which might have led to a seismic event. Students will be able to discuss the basics of seismic waves, resulting problems, and the ways in which scientists are learning new ways to deal with these disastrous phenomena
6. Discuss the different geologic eras and periods found in the rock record of Peru, and explain the connections to other continents of the world
7. Explain the development of glaciers and the resultant landforms associated with their presence, whether past or current, and sketch these for explanatory purposes. Students will be able to describe and illustrate glacial features found in the mountains of Peru, and explain the processes at work on these mountains and valleys
8. Argue the effects of global warming on the landscapes of Peru, supporting their contentions by giving legitimate examples

V. Evaluation:

- A. Testing Procedures: Various quizzes; one comprehensive test
- B. Research Paper (if applicable): Journal will be kept, and culmination of study will include a powerpoint summation.
- C. Other Evaluation Methods: Field collection and analysis journal; powerpoint presentation; classroom discussion roundtable; subject essay, whereby students write about an assigned topic using all the information given to date in order to craft responses.
- D. Grading Scale:

92-100	= A
89-91	= B+
82-88	= B
79-81	= C+
72-78	= C
65-71	= D
Below 65	= F

VI. Policies:

- A. Attendance Policy:

Attendance is of utmost importance in study abroad courses. There are no unexcused absences permitted. Multiple unexcused absences are grounds for removal from the program. Being in class on time is also very important. Frequent tardiness will be considered an absence and appropriate action will be taken. Absences due to illness must be reported immediately to the program director.

B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices: Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments. In addition to other possible disciplinary sanctions that may be imposed as a result of academic misconduct, the instructor has the authority to assign either (1) an F or zero for the assignment or (2) an F for the course.

VII. Instructional Hours:

This course will consist of a minimum of 37.5 full hours of formal instruction.