

ESCI 120: PHYSICAL GEOLOGY

Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2021
Credits:	4
Total Contact Hours:	108
Lecture Hours :	54
Lab Hours:	54
Hours Arranged:	0
Outside of Class Hours:	108
Strongly Recommended:	ENGL 101.
District General Education:	B2. Natural Sciences - Physical Sciences, B3. Natural Sciences - Laboratory
Transferable to CSU:	Yes
Transferable to UC:	Yes - Approved
Grading Method:	Standard Letter

Catalog Course Description

This course investigates the dynamic nature of the Earth through the study of earth processes including: plate tectonics, earthquakes and the Earth's interior, mineral and rock systems, crustal deformation, weathering processes, glaciers, and deserts. Students may not receive credit for both ESCI 119 and ESCI 120. 54 lecture hours, 54 lab hours.

Course Objectives

- Lecture:
 - describe geologic surroundings
 - identify and evaluate the role of geologic processes
 - evaluate the geological limits of natural resources
 - evaluate geological hazards
- Laboratory:
 - identify hand specimens of minerals and rocks by making simple tests of the physical properties of these materials
 - interpret topographic maps and aerial photographs and their use in the geological analysis of a region

Major Course Content

1. Introduction, Matter and Minerals
2. The Scientific Method and the History of Geology
3. Igneous and Metamorphic Processes
4. Volcanism and Igneous Rocks
5. Sedimentary Processes
6. Earth History
7. Geologic Time - Relative and Absolute Dating
8. Fossils and Fossilization
9. The Earth's Interior and Earthquakes
10. Mountains and Mountain Building
11. Geologic Structures
12. Plate Tectonics

13. Weathering and Soils
14. Mass Movement
15. Running Water
16. Oceans
17. Deserts
18. Glaciation
19. Geology and Humanity
20. Renewable and Non-Renewable Resources

Lab Content

1. Laboratory Techniques and Dimensional Analysis - Discussion of lab materials and etiquette, and math refresher.
2. Topographic Maps and Aerial/Stereo Photographs - Topographic profiles, aerial photographs, and topographic map analyses.
3. Plate Tectonic Boundaries and Rates - Convection, the origin of magmas, and measuring and evaluating plate tectonic rates.
4. Minerals: Identification and Uses - Mineral properties, uses, and identification.
5. Igneous Rocks: Identification, Formative Processes, and Hazards - Igneous processes; descriptions and identification of igneous rock samples.
6. Sedimentary Rocks: Identification, Formative Processes, and Hazards - Sedimentary processes; descriptions and identification of sedimentary rock samples.
7. Metamorphic Rocks: Identification, Formative Processes, and Hazards - Metamorphic processes; descriptions and identification of metamorphic rock samples.
8. Fluvial Processes and Landforms - Stream processes and geomorphology; selected case studies.
9. Glacial Processes and Landforms - Glacial processes and geomorphology; selected case studies.
10. Arid Climate Landforms and Aeolian Processes - Aeolian and arid climate processes and geomorphology; selected case studies.
11. Shoreline Processes and Landforms - Coastal processes and geomorphology; selected case studies.
12. Geologic Time: Relative and Absolute Dating - Determining relative ages, using fossils, determining absolute ages, and selected case studies.
13. Crustal Deformation and Structural Geology - Structural geology, block diagrams, and analyses of geologic maps.
14. Directed Field Study - Field methods and techniques used in geologic studies, selected location studies.

Suggested Reading Other Than Required Textbook

Geology internet website produced by the USGS, newspaper articles, and professional journals (e.g., Geology Today and GSA).

Examples of Required Writing Assignments

Relay the information gathered from impact studies, professional journals, websites, and newspapers through a scientific essay.

Examples of Outside Assignments

Study geologic impact studies for the housing project in which you live, or the college that you attend.

Instruction Type(s)

Lecture, Lab, Online Education Lecture, Online Education Lab

IGETC Area 5: Physical and Biological Sciences

5A. Physical Science, 5C. Science Laboratory