

ESCI 0003L - HISTORICAL GEOLOGY LABORATORY

Catalog Description

Formerly known as GEOL 3L

Prerequisite: Completion with grade of "C" or better or concurrent enrollment in ESCI 3

Advisory: Completion of ESCI 1 and ESCI 1L

Hours: 54 laboratory

Description: Hands-on learning in the topics of Earth history. Includes geologic dating, fossils, plate tectonics, minerals and rocks, biological evolution, the planet's origin, and the processes that have influenced paleogeography and life history during the past 4.6 billion years. (C-ID GEOL 110L) (CSU, UC)

Course Student Learning Outcomes

- CSLO #1: Identify and classify major groups of paleontological specimens.
- CSLO #2: Use geologic maps to interpret geologic history.
- CSLO #3: Apply the principles of stratigraphy and sedimentology to interpret paleoenvironments.

Effective Term

Fall 2021

Course Type

Credit - Degree-applicable

Contact Hours

54

Outside of Class Hours

0

Total Student Learning Hours

54

Course Objectives

1. Evaluate morphology and properly classify the most common fossils;
2. analyze and properly classify sedimentary rocks;
3. analyze and evaluate geologic maps and stratigraphic columns;
4. apply concepts of Historical Geology such as fossilization, ecology, evolution and extinction, plate tectonics, geologic time and dating methods, the supercontinent cycle and paleoclimate;
5. apply the principles of the scientific method;
6. use Physical Stratigraphy to correlate rock structure and interpret paleoenvironment; and
7. construct an explanation of past geological history using the principles of relative dating.

General Education Information

- Approved College Associate Degree GE Applicability
 - AA/AS - Physical Sciences
 - AS - Physical Science Lab
- CSU GE Applicability (Recommended-requires CSU approval)
 - CSUGE - B3 Lab Activity
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)
 - IGETC - 5C Laboratory Science

Articulation Information

- CSU Transferable
- UC Transferable

Methods of Evaluation

- Objective Examinations
 - Example: Explain the differences between the three types of unconformities. Performance evaluated based on how the student is able to find similarities and differences in the genesis and appearance of them.
- Problem Solving Examinations
 - Example: Classify the following fossil specimens to the appropriate taxonomic level (e.g., Phylum) based on morphology. Performance evaluated based on level of detail and completeness of morphological recognition, and accuracy of taxonomic level identified.

Repeatable

No

Methods of Instruction

- Laboratory
- Distance Learning

Lab:

1. Instructor will demonstrate how to properly classify sedimentary rocks, and students will then complete a lab applying this information.
2. After reviewing material from assigned reading, the instructor will demonstrate proper use of physical stratigraphy to correlate rock structures. Students will be divided into groups and supported by the instructor as necessary as they complete a similar activity.

Distance Learning

1. Instructor will provide recorded videos or live demonstration on how to properly classify sedimentary rocks, and students will then complete a lab applying this information.
2. After reviewing material from assigned reading, the instructor will demonstrate proper use of physical stratigraphy to correlate rock structures either live or in a previously recorded video. Students will be divided into groups and supported by the instructor as necessary as they complete a similar activity.

Typical Out of Class Assignments

Reading Assignments

1. Read the lab handout on early vascular plants and be prepared to discuss in class. 2. Read the information presented on sedimentary structures and identify them in hand samples.

Writing, Problem Solving or Performance

1. Unravel the geologic history of a given area. 2. Identify fossil specimens based on morphology.

Other (Term projects, research papers, portfolios, etc.)

Required Materials

- Historical Geology Lab Manual
 - Author: Tom, Yancey
 - Publisher: Kendall Hunt
 - Publication Date: 2015
 - Text Edition: 1st
 - Classic Textbook?:
 - OER Link:
 - OER:

Other materials and-or supplies required of students that contribute to the cost of the course.