

C-ID Descriptor

Historical Geology with Lab

Descriptor Details

- **Descriptor Title:** Historical Geology with Lab
- **C-ID Number:** 111
- **Units:** 4.0
- **Date of Last Revision:** 10/12/2017 04:43:58 PM PDT

General Description

No information provided

Prerequisites

No information provided

Corequisites

No information provided

Advisories

Introduction to Geology or Physical Geology

Content

Historical Geology C-ID Historical Geology 110

The Historical Geology course must address all of the major categories listed below and at least 75% of the subtopics.

Plate Tectonics

- Formation and Origin of the Earth
- Driving Mechanisms
- Plate Boundaries
- Hot Spots
- Crustal Evolution and Deformation
- Supercontinent Cycle

Earth's Materials

- Minerals
- Igneous, Sedimentary and Metamorphic Rocks
- Rock Cycle

Fossils

- Modes of Formation
- Classification
- Ecology, Evolution and Extinction

Dating Methods

- Geologic Time
- Relative Dating
- Absolute Dating

Stratigraphy

- Catastrophism and Uniformitarianism
- Interpretation of sedimentary rock sequences

Paleogeography

- Archaean, Proterozoic and Ediacaran geologic and tectonic events
- Paleozoic geologic and tectonic events
- Mesozoic geologic and tectonic events
- Cenozoic geologic and tectonic events
- Recent geologic and tectonic events

Lab Activities

Laboratory Activities:

Historical Geology Laboratory C-ID Geology 110L

Laboratory Activities: (must include at least 8 of the following activity topics)

1. Basic introduction to identifying rocks and minerals
2. Identify major groups of fossil organisms
3. Examine modes of fossil preservation
4. Constructing and interpreting cladograms
5. Interpret geologic maps
6. Interpret geologic cross sections
7. Interpret stratigraphic columns
8. Relative dating and interpreting sequences of geologic events
9. Introduction to absolute dating
10. Paleogeographic reconstructions
11. Field Trips

Objectives

At the conclusion of this course, the student should be able to:

- 1) Explain and apply the principles of the scientific method
- 2) Demonstrate and apply a fundamental understanding of concepts and principles of Historical Geology including:
 - Fossilization
 - The fossil record
 - Ecology, evolution and extinction
 - Plate tectonics
 - Geologic time and dating methods
 - The Supercontinent Cycle and paleoclimate
- 3) Identify representative physical samples of fossils, rocks and minerals
- 4) Explain and apply knowledge of tectonic processes to interpret geologic events throughout geologic time
- 5) Interpret geologic maps, cross sections and stratigraphic columns

- 6) Apply the principles of relative dating to interpret sequences of geologic events
- 7) Communicate complex course concepts effectively in writing and diagrams

Evaluation Methods

Shall include multiple measures of performance that may include, but are not limited to:

- Quizzes
- Exams
- Written assignments
- Research assignments
- Lab reports and activities
- Field trip reports

Textbooks

Earth System History (WH Freeman – Stanley)

The Earth Through Time (Wiley - Levin)

Historical Geology (Brooks Cole – Wicander and Monroe)

Visualizing Earth History (Wiley - Babcock)

Lab Manuals:

Historical Geology: Interpretations and Applications (Prentice Hall – Poort and Carlson)

Insights: A Laboratory Manual for Historical Geology (Kendall Hunt – Ossian)

Laboratory Studies in Earth History (McGraw Hill – Levin and Smith)