GEOL C185: HISTORICAL GEOLOGY

Item	Value
Curriculum Committee Approval Date	03/15/2013
Top Code	191400 - Geology
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)
Local General Education (GE)	• CL Option 1 Natural Sciences (CB1)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 5A Physical Science (5A)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 5A Physical Science (5A)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B1 Physical Science (B1)

Course Description

An introduction to Earth's history and the life it supports. Subjects include geologic dating, plate tectonics, stratigraphy, fossils, biological evolution, the planet's origin, and the processes that have influenced paleogeography during the past 4.6 billion years. ADVISORY: GEOL C105. Transfer Credit: CSU; UC. C-ID: GEOL 110.**C-ID:** GEOL 110.

Course Level Student Learning Outcome(s)

1. Effectively apply the concepts, principles, and theories of historical geology to make accurate observations.
2. Support opinions/ideas regarding Earth's history using solid research principles and the scientific method.
3. Communicate complex course concepts regarding Earth's history effectively in presentations, writing or diagrams.

Course Objectives

- 1. Demonstrate a fundamental understanding of concepts and principles of Historical Geology including, fossilization, ecology, evolution, extinction, plate tectonics, geologic time and dating methods, the supercontinent cycle, and paleo-climate.
- 2. Explain formation of and basic properties of fossils, minerals and rocks.
- 3. Explain the tectonic processes that shape the Earth over geologic time.
- 4. Interpret sequences of geologic events.

Lecture Content

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

Method(s) of Instruction

- Lecture (02)
- DE Online Lecture (02X)

Instructional Techniques

Lecture, discussion, question-and-answer sessions, small-group problem solving, and case-study reviews based on real-life situations. Guest speakers, FAQs, exercises, learning hints and field trips may supplement the reading assignments and lectures.

Reading Assignments

Students will read from the course textbook as well as from supplemental materials assigned by the instructor.

Writing Assignments

Students will complete written work such as essays, presentations or reports.

Out-of-class Assignments

Outside the classroom, students will work on assigned papers and/or research-based projects or assignments and will formulate questions and discussion items. They will communicate with the instructor and/or fellow students.

Demonstration of Critical Thinking

Use of scientific method to develop and prove hypotheses. Analyze fossil record to determine the environment in which fossils were formed. Explain tectonic processes that shape the earth over time and describe the Supercontinent Cycle.

Required Writing, Problem Solving, Skills Demonstration

Course assignments include written work that demonstrates the ability to construct arguments based on scientific method, effectively use geologic evidence to reconstruct Earths history, and analyze sources.

Eligible Disciplines

Earth science: Masters degree in geology, geophysics, earth sciences, meteorology, oceanography, or paleontology OR bachelors degree in geology AND masters degree in geography, physics, or geochemistry OR the equivalent. Masters degree required.

Textbooks Resources

1. Required Levin, L.L; King Jr., D.T. The Earth Through Time, 11th ed. Wiley, 2016 Rationale: - Legacy Textbook Transfer Data: Legacy text 2. Required Stanley, S.M.; Juczaj, J.A. Earth System History, 4th ed. Freeman/Worth, 2015 Rationale: - Legacy Textbook Transfer Data: Legacy text 3. Required Wicander, R.; Monroe, J.S. Historical Geology:

Evolution of Earth and Life Through Time, 8th ed. Cengage Learning, 2016 Rationale: - Legacy Textbook Transfer Data: Legacy text 4. Required Babcock, L. Visualizing Earth History, 1st ed. Wiley, 2008 Rationale: This is included as a possible text by the California Community Colleges Chancellors Office for this C-ID course. Legacy Textbook Transfer Data: Legacy text

Other Resources

1. Coastline Library