GEOL A105: GENERAL GEOLOGY

Item	Value
Curriculum Committee Approval Date	09/09/2015
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)
Associate Arts Local General Education (GE)	• OC Physical/Biological Sci - AA (OB)
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

Composition and structure of the earth and the processes which modify the crust and the surface and their effect on man. Not open to students who are taking or have successfully completed GEOL A110. One field trip required. Enrollment Limitation: GEOL A105H; students who complete GEOL A105 may not enroll in or receive credit for GEOL A105H. Transfer Credit: CSU; UC: Credit Limitation: No credit for GEOL A105, GEOL A105H if taken after or concurrently with GEOL A110. C-ID: GEOL 100.**C-ID:** GEOL 100.

Course Level Student Learning Outcome(s)

1. Demonstrate an understanding of mineral and rock: origin, composition, structure, properties, groups (types), and uses.
2. Explain the Theory of Plate Tectonics and its application to volcanic activity, seismic activity and mountain building processes.
3. Demonstrate an understanding of surface water and groundwater, the exchange of water between oceans, atmosphere, and continents, how the Earth's surface is sculpted by external forces, environmental problems associated with ground water.
4. Demonstrate an understanding of relative dating and radiometric dating as it relates to Earth's history and the Geologic Time Scale.
5. Describe the ocean in the following terms: structure, composition, circulation, tides, major units of ocean floor topography and shoreline dynamics.

Course Objectives

- 1. Identify and distinguish the materials of the earth and the processes which change these materials;
- 2. Compare and contrast major geologic processes and products and their relevance to current technology; to present technology.
- 3. Experience the process of inductive and deductive reasoning;
- 4. Identify the geologic hazards in our everyday life.
- 5. Identify by sight, at least 50 rocks and minerals.
- 6. Analyze geologic structures to determine which forces are present in the Earth.
- 7. Construct and justify diagrams for plate tectonics and structure of the Earth.
- 8. Analyze geologic features for hazards and benefits which are present.
- 9. Explain the processes of erosion, and mass wasting, and their effect upon the Earth and humans.
- 10. Locate, and demonstrate an understanding of the modes of formation of economic, geologic resources
- 11. Analyze global climate change as it relates to human activity, as well as reviewing, changes in climate through Earths 4.6 billion year history.

Lecture Content

The Nature of Science Matter and Energy Minerals Igneous Activity Weathering Sedimentary Rocks Metamorphism Geologic Time Water Mass Movement Glaciation Deserts Shorelines Earthquakes Deformation Plate Tectonics Geologic Resources

Method(s) of Instruction

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

Instructional Techniques

1. Lecture and application of ideas 2. Individual, paired and small group exercises

Reading Assignments

Students will spend approximately two hours per week on readings assigned from textbook(s).

Writing Assignments

Students will spend approximately two hours per week on written assignments that analyze and critically evaluate geologic data. Examinations will include questions requiring written answers.

Out-of-class Assignments

Students will spend approximately two hours per week on homework including textbook exercises, viewing and analyzing photos and videos regarding geologic structures and features.

Demonstration of Critical Thinking

Tests, problem solving, final examination, field project/video essays, and field trip.

Required Writing, Problem Solving, Skills Demonstration

Examinations will include questions requiring written answers

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 Marshak, S.. Essentials of Geology, 4 ed. New York: W.W. Norton and Company, 2012