COURSE OUTLINE OF RECORD

Number: GEOL G105  
TITLE: General Geology

ORIGINATOR: Bud Benneman  
EFF TERM: Fall 2018

FORMERLY KNOWN AS:  
DATE OF OUTLINE/REVIEW: 03-20-2018

CROSS LISTED COURSE:  
TOP NO: 1914.00

SEMESTER UNITS: 3.0
HRS LEC: 54.0  
HRS LAB: 0.0  
HRS OTHER: 0.0
CONTACT HRS TOTAL: 54.0
STUDY NON-CONTACT HRS RECOMMENDED: 108.0

CATALOG DESCRIPTION:
This is a course designed specifically for non-science majors desiring a three unit non-laboratory survey course in geology. The Scientific Method is used to illustrate the discovery of natural physical processes on Earth. Content includes aspects of geology with emphasis on recent discoveries of plate tectonics and the movement of continents. Students will study topics such as important minerals, rock classification, mountain building and interior processes responsible for landscape development. This course will also cover historical topics such as the geologic time scale, the fossil record and evolution of life from marine organisms to land plants and animals. The latter portion of the course covers environmental geology with the impacts humans have on Earth and how the Earth impacts humans through landslides flash floods, volcanic eruptions, and earthquakes. UC credit limitations: no credit if taken after Geology G110.

JUSTIFICATION FOR COURSE:

PREREQUISITES:

COREQUISITES:

ADVISORIES:

ASSIGNED DISCIPLINES:
Earth science

MATERIAL FEE: Yes [ ] No [X] Amount: $0.00

CREDIT STATUS: Noncredit [ ] Credit - Degree Applicable [X] Credit - Not Degree Applicable [ ]

GRADING POLICY: Pass/No Pass [ ] Standard Letter [X] Not Graded [ ] Satisfactory Progress [ ]

OPEN ENTRY/OPEN EXIT: Yes [ ] No [X]

TRANSFER STATUS: CSU Transferable[ ] UC/CSU Transferable[X] Not Transferable[ ]

BASIC SKILLS STATUS: Yes [ ] No [X]  
LEVELS BELOW TRANSFER: Not Applicable

CALIFORNIA CLASSIFICATION CODES: Y - Not Applicable

NON CREDIT COURSE CATEGORY: Y - Not applicable, Credit Course

OCCUPATIONAL (SAM) CODE: E

REPEATABLE ACCORDING TO STATE GUIDELINES: No [X]  
NUMBER REPEATS:

REQUIRED FOR DEGREE OR CERTIFICATE: No [ ] Yes [X]
Liberal Arts: Emphasis in Science(Associate in Arts)

GE AND TRANSFER REQUIREMENTS MET:

IGETC Area 5: Physical and Biological Sciences
   5A: Physical Science
      x
   x

CSU GE Area B: Scientific Inquiry and Quantitative Reasoning
   B1 - Physical Science

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COURSE LEVEL STUDENT LEARNING OUTCOME(S) Supported by this course:

1. List, in order, major advances of life on Earth and outline the general patterns of change (life, climate, continents) through time.

2. Relate the manner in which matter occurs in nature and classify the matter into appropriate mineral and rock groups.

3. Summerize recent discoveries in plate tectonics and account for various geologic processes and phenomenon with this theory.

4. Report on the fundamentals of historical geology including geologic dating, the geologic time scale and the sedimentary record.

5. Explain the processes which have formed and continue to effect the Earth.

COURSE OBJECTIVES:

1. Explain how the Earth's processes and materials affect our lives.

2. Identify the internal processes operating on Earth and correlate these processes with phenomena such as earthquakes, volcanism and plate tectonics.

3. Identify the ways in which geology is used in society and identify geologic hazards such as earthquakes, floods, landslides and volcanic eruptions.

4. Describe the origin and occurrence of the Earth’s valuable mineral and fossil fuel resources.

COURSE CONTENT:

LECTURE CONTENT:

A. Introduction to Earth Science, the scientific method, and the study of minerals, rocks, and geologic processes

B. Understand Geologic time and the evolutuion of the Earth's geologic history
   1. Geologic Time Scale
   2. The fossil record and the evolution of life from marine life to land plants and animals

C. Plate tectonics the unifying theory
   1. Plate Tectonic Model and the driving forces responsible for plate movement
   2. Plate Boundaries

D. Atoms and elements the building blocks for minerals

E. Mineral properties and mineral identification
   1. Specific and special properties of minerals and inorganic compounds
   2. Economic important minerals

F. Rocks
   1. Igneous rocks and processes, including plutonic rocks and volcanism
   2. Sedimentary rocks and processes of weathering and new rock formation
   3. Metamorphic rocks and processes heat and pressure

G. Economically important materials
   1. Mineral deposits
   2. Fossil fuels

H. Surface Processes and Products of natural Earth forces
   1. Streams and groundwater
   2. Glaciers and climate change, warmer and colder and paleoclimatic studies
   3. Wind and water with both erosion and deposition of rocks and sediments
   4. Landslides and mass wasting

I. Internal Processes
   1. Earthquakes and Earth's interior relating to plate tectonics
   2. Primary and secondary earthquake waves
3. Structural Geology and fault types
4. Faulting types and folding forming anticlines and synclines
J. Mountain building and tectonics
   1. Geologic forces: tension and compression
   2. Major mountain building events
K. Ocean basins and the modern coastline
   1. Waves, currents, and tides
   2. Coastal erosion and deposition of sediment

METHODS OF INSTRUCTION:
   A. Lecture:
   B. Independent Study:

INSTRUCTIONAL TECHNIQUES:

COURSE ASSIGNMENTS:
   Reading Assignments
   Required Reading such as:
   Textbook
   Websites

   Out-of-class Assignments
   Internet assignments and a research outline.

   Writing Assignments
   Written individual reports and, internet assignments.

METHODS OF STUDENT EVALUATION:
Midterm Exam
Final Exam
Short Quizzes
Written Assignments
Essay Examinations
Objective Examinations
Report
Projects (ind/group)
Problem Solving Exercises
Oral Presentations
Skills Demonstration

   Demonstration of Critical Thinking:
   Subjects such as plate tectonics, Earth history, geologic dating and evaluation of the fossil record. Students must judge data and make decisions for themselves on the validity of various concepts.

   Required Writing, Problem Solving, Skills Demonstration:
   Written individual reports and, or poster presentations. May include group presentations of projects.

TEXTS, READINGS, AND RESOURCES:
TextBooks:

Periodicals:

LIBRARY:
   Adequate library resources include: Non-Print Materials