GEOL 1L Course Outline as of Fall 2019

CATALOG INFORMATION

Dept and Nbr: GEOL 1L Title: GEOLOGY LAB
Full Title: Geology Lab
Last Reviewed: 8/27/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.00	Lecture Scheduled	0	17.5	Lecture Scheduled	0
Minimum	1.00	Lab Scheduled	3.00	6	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 0.00 Total Student Learning Hours: 52.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
An introduction to Earth materials through the identification of minerals and rocks. Interpretation of geologic processes and landforms through analyzing maps and other data.

Prerequisites/Corequisites:
Course Completion or Current Enrollment in GEOL 1

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: An introduction to Earth materials through the identification of minerals and rocks. Interpretation of geologic processes and landforms through analyzing maps and other data. (Grade or P/NP)
Prerequisites/Corequisites: Course Completion or Current Enrollment in GEOL 1
Recommended:
Limits on Enrollment:
Transfer Credit: CSU;UC.

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**		Effective:	Inactive:
CSU GE:	**Transfer Area**		Effective:	Inactive:
	B3	Laboratory Activity	Fall 1984	
IGETC:	**Transfer Area**		Effective:	Inactive:
	5C	Fulfills Lab Requirement	Fall 1981	

CSU Transfer:	Transferable	Effective:	Fall 1984	Inactive:
UC Transfer:	Transferable	Effective:	Fall 1984	Inactive:

CID:
CID Descriptor: GEOL 100L Physical Geology Laboratory
SRJC Equivalent Course(s): GEOL1L

Certificate/Major Applicable:
Major Applicable Course

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Apply scientific techniques to solve geological questions.
2. Recognize, indentify and describe Earth materials.
3. Interpret evidence of tectonic plate interaction.
4. Utilize maps and other data to interpret features on the Earth's surface.

Objectives:
During this course, students will:
1. Identify common minerals by testing physical properties and using classification charts.
2. Identify igneous, sedimentary, and metamorphic rocks using classification charts. Deduce environments where rocks form.
3. Interpret geologic history using relative and absolute dating methods.
4. Utilize data to interpret tectonic activity such as earthquake magnitude, epicentral location and plate movement.
5. Analyze maps and aerial photographs to characterize surface features and identify the processes that formed various features.

Topics and Scope:

I. Introduction to Scientific Measurement
   A. SI (international system) units
   B. Spatial measurements
II. Earth Materials
   A. Minerals
      1. Physical properties of minerals
      2. Identification
   B. Igneous rocks

1. Common textures and compositions
2. Identification
3. Cooling history

C. Sedimentary rocks
1. Common textures and compositions
2. Identification
3. Depositional history and environments

D. Metamorphic rocks
1. Common textures and compositions
2. Identification
3. Metamorphic environments (occurrence)

III. Geologic Time
A. Relative dating
B. Radiometric dating
C. The geologic time scale

IV. Map Interpretation
A. Compass directions
B. Latitude and longitude
C. Elevation
D. Interpreting geologic/geomorphic features

V. Plate Tectonics
A. Plate boundaries
B. Earthquake epicentral location and triangulation

VI. Surface Processes (optional topics):
A. Mass wasting
1. Classification
2. Identification from maps and aerial photographs

B. Stream processes
1. Classification of stream types
2. Identification from maps and aerial photographs

C. Groundwater
1. Storage and flow
2. Extraction and contamination

D. Glacial processes
1. Erosional and depositional landforms
2. Identification of features from maps and aerial photographs

E. Desert processes
1. Erosional and depositional landforms
2. Identification of features from maps and aerial photographs

F. Coastal processes
1. Erosional and depositional landforms
2. Identification of features from maps and aerial photographs

Assignment:

1. Text reading, approximately 5 to 20 pages per week
2. Weekly in-class assignments including calculations, sketches, rock and mineral identification, and map interpretation
3. Examinations (3-5) and quizzes (0-15)
4. Class participation: in-class activities, group work, discussions, etc.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

In-class assignments	Problem solving 20 - 60%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None	Skill Demonstrations 0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Exams; quizzes	Exams 40 - 80%

Other: Includes any assessment tools that do not logically fit into the above categories.

Class participation and attendance	Other Category 0 - 10%

Representative Textbooks and Materials:
Laboratory Manual in Physical Geology. 11th ed. American Geological Institute and National Assn of Geoscience Teachers. Pearson. 2018
Laboratory Manual for Introductory Geology. 3rd ed. Ludman, Allan and Marshak, Stephen. Norton. 2015
Instructor prepared materials