

GEOL-111: PHYSICAL GEOLOGY LABORATORY

Effective Term

Fall 2021

CC Approval

04/03/2020

AS Approval

04/14/2020

BOT Approval

04/23/2020

COCI Approval

05/25/2021

SECTION A - Course Data Elements

CB04 Credit Status

Credit - Degree Applicable

Discipline

Minimum Qualifications	And/Or
Earth Science (Master's Degree)	

Subject Code

GEOL - Geology

Course Number

111

Department

Geology

Division

Science and Engineering (SE)

Full Course Title

Physical Geology Laboratory

Short Title

Physical Geology Laboratory

CB03 TOP Code

1914.00 - Geology

CB08 Basic Skills Status

NBS - Not Basic Skills

CB09 SAM Code

E - Non-Occupational

Rationale

Add GEOL 110 as a prerequisite, edit SLOs, update Methods of Evaluation, update Assignments, update textbook.

SECTION B - Course Description

Catalog Course Description

This is a laboratory course to supplement Geology 110. The course investigates minerals and rocks and includes the use of topographic maps and profiles as well as three-dimensional aerial photographs in analyzing landforms and geologic structures. The interpretation of geologic maps, cross sections and exercises on geologic processes are all included.

SECTION C - Conditions on Enrollment

Open Entry/Open Exit

No

Repeatability

Not Repeatable

Grading Options

Letter Grade or Pass/No Pass

Allow Audit

Yes

Requisites

Prerequisite(s)

Previous completion of or current enrollment in GEOL-110.

Corequisite(s)

Previous completion of or current enrollment in GEOL-110.

Requisite Justification

Requisite Description

Course in a Sequence

Subject

GEOL

Course

110

Level of Scrutiny

Content Review

Upon entering this course, students should be able to:

1. Read, comprehend, and analyze college-level texts of varying lengths, styles, and subjects. Be able to identify main and supporting ideas and underlying structure. Use strategies to infer ideas and respond in writing to them. Summarize and paraphrase texts.
2. Possess the study and organizational skills necessary to complete reading assignments of up to 20 pages per class meeting.
3. Write clearly conceived and well-formulated essays of 750-1000 words which are carefully organized and presented, and which are reasonably free from errors.

SECTION D - Course Standards

Is this course variable unit?

No

Units

1.00

Lab Hours

54.00

Outside of Class Hours

0

Total Contact Hours

54

Total Student Hours

54

Distance Education Approval

Is this course offered through Distance Education?

Yes

Online Delivery Methods

DE Modalities	Permanent or Emergency Only?
Entirely Online	Permanent
Hybrid	Permanent
Online with Proctored Exams	Permanent

SECTION E - Course Content

Student Learning Outcomes

Upon satisfactory completion of the course, students will be able to:	
1.	Identify geologic materials and features of the earth.
2.	Explain how geologic features are formed by geologic processes.
3.	Identify and evaluate the impacts of geologic processes on society, with an emphasis on geologic natural hazards, land-use planning, and global climate.

Course Objectives

Upon satisfactory completion of the course, students will be able to:	
1.	Practically apply the principles of the scientific method.
2.	Demonstrate a conceptual understanding of fundamental concepts, principles, and interactions of Earth's systems applicable to the geological Sciences.
3.	Demonstrate an understanding of the Earth through the identification and evaluation of minerals.
4.	Demonstrate an understanding of the Earth through the identification and evaluation of igneous, sedimentary and metamorphic rocks.
5.	Demonstrate an ability to communicate complex course concepts effectively in writing and diagrams.
6.	Demonstrate the ability to read and interpret topographic and geologic maps and answer questions pertaining to geologic processes.

Course Content

1. Laboratory Activities
 - a. Mineral identification
 - b. Rock identification
 - c. Topographic Maps
 - d. Surface water processes
 - e. Ground water processes
 - f. Coastal processes
 - g. Desert processes
 - h. Glacial processes
 - i. Geological structures
 - j. Geological maps and cross sections
 - k. Field Trips

Methods of Instruction

Methods of Instruction

Types	Examples of learning activities
Lab	
Lecture	Lectures: Computer enhanced lectures covering core concepts, terminology and geological analysis.
Observation and Demonstration	Demonstration: Geological events and processes will be demonstrated.

Group Work	Collaborative Learning: Students will be assigned problem sets that involve working with groups.
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Online Adaptation

Types	Examples of learning activities
Activity	
Directed Study	
Discussion	
Group Work	
Individualized Instruction	
Journal	
Lecture	

Instructor-Initiated Online Contact Types

Announcements/Bulletin Boards
 Chat Rooms
 Discussion Boards
 E-mail Communication
 Telephone Conversations
 Video or Teleconferencing

Student-Initiated Online Contact Types

Chat Rooms
 Discussions
 Group Work

Course design is accessible

Yes

Methods of Evaluation

Methods of Evaluation

Types	Examples of classroom assessments
Exams/Tests	There will be a minimum of three exams. Exams will consist of identifying mineral and rocks samples, reading and interpreting topographic and geologic maps and structures, and demonstrating knowledge of basic laboratory methods. Examples: 1. Correctly identify the unknown mineral samples using physical properties test methods. 2. Draw the appropriate map symbols for the structural features found on the given map.
Quizzes	Quizzes covering current laboratory exercises and material will be given throughout the course. Examples: 1. What is the building block of silicate minerals? 2. A fractional scale of 1:24000 means that 1 inch on the map is equal to ____?
Other	Field Trips - There will be at least one required field trip report that will include sketches, field notes, and written description/conclusion of the field area observed. Examples: 1. Class field trip to a local quarry. 2. Self-guided field trip following a field guide provided by the instructor.
Lab Activities	Students will work individually and in groups during lab activities. Labs will be checked by instructor prior to the student leaving lab. Examples: 1. Mineral identification of silicate and non-silicate groups by testing the physical properties of unknown minerals. 2. Identifying igneous rock textures and interpreting igneous rock processes associated with the textures.

Assignments

Reading Assignments

Selected readings from the assigned Laboratory Manual and/or lab materials provided in class.

Examples:

1. Mineral Properties, Uses, and Identification, 13 pages, Laboratory Manual for Introduction Geology.
2. Rock-Forming Processes and the Rock cycle, 9 pages, Laboratory Manual for Introduction Geology.

Writing Assignments

Writing will be assigned in pre-lab assignments, lab reports, exams, and field trip report(s).

Examples:

1. Lab Report: Correctly identify a geologic structure in the field and explain the processes that led to the formation of that feature.
2. Exam: Name and describe an example of mass wasting within Napa County.

SECTION F - Textbooks and Instructional Materials

Material Type

Manual

Author

Ludman, A.; Marshak, S.

Title

Laboratory Manual for Introduction Geology

Publisher

Norton

Year

07-01-2019

SECTION G - Diversity, Equity and Inclusivity

Course Codes (Admin Only)

CB00 State ID

CCC000341316

CB10 Cooperative Work Experience Status

N - Is Not Part of a Cooperative Work Experience Education Program

CB11 Course Classification Status

Y - Credit Course

CB13 Special Class Status

N - The Course is Not an Approved Special Class

CB23 Funding Agency Category

Y - Not Applicable (Funding Not Used)

CB24 Program Course Status

Program Applicable

Allow Pass/No Pass

Yes

Only Pass/No Pass

No