



MASTER COURSE OUTLINE

Prepared By: Brian Marion

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COURSE TITLE

Intro to Physical Geology

GENERAL COURSE INFORMATION

Dept.: GEOL&

Course Num: 101

(Formerly:)

CIP Code: 40.0601

Intent Code: 11

Program Code: N/A

Credits: 5

Total Contact Hrs Per Qtr.: 66

Lecture Hrs: 44

Lab Hrs: 22

Other Hrs: 0

Distribution Designation: Lab Science LS

COURSE DESCRIPTION (as it will appear in the catalog)

This course provides a study of the structure and composition of the earth's crust. Emphasis is placed on mountain building forces, weathering, natural hazards, rocks and minerals, and structural change. Upon completion, students should be able to explain the structure, composition, and formation of the earth's crust. There will be a required field trip that will take the time of a lecture and lab.

PREREQUISITES

MATH 098 completion

TEXTBOOK GUIDELINES

Tarback, Lutgens, and Tasa, Earth: An Introduction to Physical Geology. 12th edition, Pearson, 2016 or similar text as approved by the department.

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:

1. Describe the origin and nature of the earth.
2. Discuss composition of the earth and the conditions under which various materials were formed.
3. Identify erosional processes (water, wind, glaciation).
4. Describe the processes of plate tectonics.
5. Explain rock and landform occurrences using plate tectonics.
6. Interpret topographic maps regarding fluvial, glacial, structural, and coastal geomorphology.
7. Distinguish earth processes such as mass wasting, weathering, surface water, ground water and glaciation.
8. Identify igneous, metamorphic, and sedimentary rocks.
9. Describe igneous processes and volcanism.
10. Describe stress and related processes to earthquakes.

INSTITUTIONAL OUTCOMES

IO2 Quantitative Reasoning: Students will be able to reason mathematically.

COURSE CONTENT OUTLINE

Lecture

1. Introduction to science and the scientific method
2. Origin of the Earth and plate tectonics
3. Rock cycle and minerals
4. Igneous rocks and volcanism
5. Sedimentary rocks and weathering processes
6. Metamorphic rocks
7. Deformation and mountain building
8. Earthquakes
9. Tsunamis
10. Glaciation and Climate Change (as time permits)
11. Geology in our lives

Lab

1. Measuring distance and unit conversion
2. Topographic contours
3. Mineral identification
4. Earthquake Triangulation
5. Rock types and identification
6. Geologic maps
7. Cross sections and folds
8. Geomorphology

DEPARTMENTAL GUIDELINES *(optional)*

- The overall course percentage will be based on the following weighted categories:
 - Lecture exams (including 2-3 tests) collectively worth at least 20%,
 - Student Final Project worth 20%
 - Class assignments/quizzes collectively worth 30%
 - Laboratory work collectively worth 30%:
 - Lab write-ups 10%
 - Lab exams (3 quizzes and a final) 10%
 - Lab field-trip 10%
- There is an associated field-trip with this course as part of the lab credit. The field trip will require some extra time than available in the standard lab time, so accommodations must be made and the field trip will take the place of two regularly scheduled labs. Possible locations for the field trip include: Sun Lakes-Dry Falls state park and visitor center, Drumheller Channels National natural landmark, and the Moses Lake mud flats and sand dunes.
- A standard grade scale will be used for this course with a 2.0 grade point corresponding to 70-72%.
- All exams are proctored. When possible, exams are held on campus. Online and hybrid courses may have exams online, they may or may not be proctored.
- Lab is an essential part of this class and is required for credit. Students missing more than two labs will not be given credit for this course.
- PO5 should be assessed: Students will be able to solve problems by gathering, interpreting, combining and/or applying information from multiple sources.

DIVISION CHAIR APPROVAL

DATE

