GEO 1010

Division: Natural Science and Mathematics
Department: Geology
Course: GEO 1010
Title: Survey of Geology
Catalog Description:

This course is a study of the earth, its materials, its surface processes, internal processes and a brief account of earth s history. Designed for non-science majors. (A field trip may be required.)

General Education Requirements: Physical Science
Semesters Offered: Fall, Spring
Credit/Time Requirement: Credit: 3; Lecture: 3; Lab: 0
Clock/Hour Requirements: 0
Offered for Non-Credit: No
Prerequisites: Math 1010 competency

Corequisites: GEO 1015

Justification:

This course is offered to introduce non-science majors to the science of geology, to educate students about the processes that operate on the earth now and in the past and how humans interact with the modern processes, to help students appreciate the rich natural geologic laboratory present in Utah. This class meets the Physical Science requirement for G.E. at Snow College and is a common course number at other public colleges in Utah. The course also exposes many people to geology for the first time and thus provides a few geology majors to support our program.

Student Learning Outcomes:

Upon successful completion of this course a student will be able to:

- understand the methods of science and how geology is unique in its approach to knowing about the earth
- explain the origin of common minerals and rocks
- understand the processes of weathering and erosion by water, glaciers, and downslope movement
- identify and explain the origin of landforms created by erosion and other processes
- describe the structure and composition of the earth
- understand the processes that operate within the earth such as plate tectonics and earthquakes
- understand the basic concepts of historical geology
    - dating rocks
    - geologic time
    - the fossil record
    - evolution of life

- understand environmental and economic aspects of human's interactions with the earth.

Content:

LECTURE:

- Basic Chemistry
- Mineralogy
- Rock Cycle
- Igneous Rocks
- Sedimentary Rocks
- Metamorphic Rocks
- Erosion by Mass Wasting
- Erosion by Rivers
- Groundwater
- Erosion by Glaciers
- Earthquakes
- Internal Structure and Composition of the Earth
- Rock Deformation: Folds and Faults
- Plate Tectonics
- Earth History: Basic Concepts and Measurement of Time
- Earth History: The Fossil and Rock Record

General Education Outcomes:

1) Read effectively, constructively, and critically.
Students will read journal articles and web sites related to topics and issues covered in class such as evolution, dating of rocks, global warming, etc. Students will be asked to look for bias in readings during class discussions. Students will be asked to summarize readings on quizzes and exams or in class discussions. Students will receive help if they cannot understand readings.

2) Write clearly, informatively, and persuasively.
Students are required to write essays and short answers on quizzes, exams, reading assignments and homework and short answers Feedback is given about clarity of writing and communication of understanding of the topic.

6) Apply computational skills to a variety of contexts.
Students are also required to make simple calculations such as scale conversions, distance calculations, etc.

7) Apply scientific reasoning to a variety of contexts.
Students are taught the methods of science in general and specifically related to geologic situation. Class discussions on evolution and plate tectonics visit this issue. Students are asked to apply geological reasoning on exams as opposed to simple recall of facts. Students are asked to evaluate internet sources for bias and scientific merit.

Key Performance Indicators:

- 2 lecture exams (multiple choice and essay): 40-50%
- Homework: questions on readings and practice (approximately 30 assignments): 10-15%

- Field trip: 5-10%
- Comprehensive Final (multiple choice and essay): 30-35%

Representative Text and/or Supplies:

- Frederick K Lutgens and Edward J. Tarbuck, *Essentials of Geology*, 2000 or current edition.

Optimum Class Size: 24
Maximum Class Size: 30

Signatures:

I hereby submit this course syllabus:

Renee Faatz, , Associate Professor

I hereby find this course consistent with the goals and resources of the Geology Department:

Renee Faatz, , Associate Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)