

SYLLABUS

COURSE # AND TITLE: GEOL 111, Historical Geology
OF CREDITS: 4 (3+2P)

CATALOG DESCRIPTION

A geologic history and development of life on the earth as recorded by rocks and fossils. Special consideration is given to plate tectonics and fossils in the lectures and to fossils in the laboratories.

Semester Offered: On Demand

Prerequisites: GEOL 110

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will....

<i>Learn</i>	<i>Students will actively and independently acquire, apply and adapt skills and knowledge to develop expertise and a broader understanding of the world as lifelong learners.</i>
<i>Think</i>	<i>Students will think analytically and creatively to explore ideas, make connections, draw conclusions, and solve problems.</i>
<i>Communicate</i>	<i>Students will exchange ideas and information with clarity and originality in multiple contexts.</i>
<i>Integrate</i>	<i>Students will demonstrate proficiency in the use of technologies in the broadest sense related to their field of study.</i>
<i>Act</i>	<i>Students will act purposefully, reflectively, and respectfully in diverse and complex environments.</i>

GENERAL LEARNING OBJECTIVES

Upon completion of the course, the student should understand the following content areas:

1. The geologic time scale, including how it was constructed using relative and absolute dating techniques, and a perspective of deep time.
2. The tectonic history of Earth, including the formation and breakup of Rodinia, Pannotia, and Pangaea.
3. Evolution of Earth's atmosphere, oceans, and climate.
4. Biologic innovations on earth, including the appearance and evolution of plants, invertebrates, and vertebrates.

SPECIFIC LEARNING OUTCOMES

Upon successful completion of the course, the student will be able to:

1. Have memorized the eons, eras, periods, and epochs of the geologic time scale, as well as timing of major geologic events.

2. Produce a time-line listing major physical and biological events in Earth history.
3. Explain the history recorded in igneous and metamorphic rocks, the significance of texture and mineral composition, and the setting in which each forms.
4. Explain the history recorded by texture and composition of sedimentary rocks, relating these properties to source area, distance and mechanism of sediment transport, and characteristics of the depositional environment.
5. Describe the biases inherent in the fossil record.
6. Describe the evidence for organic change through time, including evidence supplied by the fossil record.
7. Describe the accomplishments of men and women who have advanced our understanding of Earth history (e.g., Hutton, Wegener, Hess, Darwin, Curie, etc.).
8. Describe the unique attributes of each eon/era/period of geologic time, including distinguishing rock types, plate tectonic settings, economic deposits, paleoclimate, life-forms, and major environments.
9. Describe major biotic innovations through time, and their relationship to the physical climate.
10. Discuss the five major mass extinctions recorded by fossil evidence including potential causes and organisms affected.
11. Read and interpret a geologic map, and construct a geologic cross-section.

Syllabus developed by _____ Date: _____

Syllabus reviewed by _____ Date: _____

A current syllabus must be on file in the dean's office for every course being taught during a given semester.