

## **GEOL 2110- HISTORICAL GEOLOGY 3 CREDITS**

### **SYLLABUS**

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#### **CATALOG DESCRIPTION**

This course reviews the major geological and biological processes and events over the Earth's 4.6-billion-year history. Students will learn about the formation of the Earth and its development through time including changes in the lithosphere, atmosphere, hydrosphere, and biosphere. The interrelationships between the physical aspects of Earth history and biological origins, evolution of species, and causes of extinctions will be explored.

Prerequisites: GEOL 1110

Semester Offered: Fall, Summer

#### ***COMMON STUDENT LEARNING OUTCOMES***

*Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...*

##### **BROAD AND SPECIALIZED LEARNING**

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

##### **CRITICAL THINKING**

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

##### **CULTURAL AND CIVIC ENGAGEMENT**

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

##### **EFFECTIVE COMMUNICATION**

Students will exchange ideas and information with clarity in multiple contexts.

##### **INFORMATION LITERACY**

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

##### **INTEGRATING TECHNOLOGIES**

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

#### **COURSE LEARNING OUTCOMES**

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

1. List the major principles of stratigraphy and biostratigraphy and discuss their significance.

2. Recognize or explain how sedimentary rocks can be used to interpret ancient environments.
3. Recognize or explain how plate tectonics has affected the distribution of life, climate, and sea level.
4. Describe the process of Darwinian evolution.
5. Demonstrate a basic knowledge of biodiversity.
6. Recognize and explain taphonomy and the biases inherent in the fossil record.
7. Discuss the major mass extinctions recorded by fossil evidence including potential causes and organisms affected.
8. Compare relative versus absolute time and explain how geologists determine the ages of rocks, fossils, and the Earth.
9. Discuss the development of the geologic time scale.
10. Recognize or explain the history of life on Earth during major time periods and describe major biological innovations through time.
11. Recognize or explain the physical geologic evolution of Earth over time.