



NORTHWEST FLORIDA STATE COLLEGE

Course Syllabus

Course Name: Principles of Geology I

Course Number: GLY2010C

Section: 10730

Credit Hours: 4

Instructor Name: Dr. Jonathan Bryan

Instructor Office Location: 350/217 Niceville Campus

Instructor Email: bryanj@nwfsc.edu

Course Curriculum

Using the scientific method, critical thinking skills, data analysis, this course will examine the fundamental processes of the Earth system, composed of an atmosphere, hydrosphere, cryosphere, lithosphere, biosphere, and exosphere through time. The course will also explore interactions between these spheres, including critical analysis of scientific theories and emphasize lithospheric connections with humanity.

Goals

- Students will become familiar with the major, interacting planetary systems of the Earth—the lithosphere (solid, rocky Earth), hydrosphere/cryosphere (primarily the ocean and glacial ice), atmosphere (gaseous Earth), and biosphere/ecosphere (living Earth).
- Students will learn to describe and identify the major types of Earth materials, including: crystal systems, chemical classification of minerals, the identity of common minerals, and the characteristic and identification of major types of igneous, sedimentary, and metamorphic rocks.
- Students will become familiar with major plutonic and volcanic processes, including the classification of volcanic systems.
- Students will learn basic techniques in map reading and interpretation, including topographic maps, and use of a Brunton Compass.
- Students will examine geomorphological environments and processes, including weathering, soil formation, erosion/mass wasting, fluvial (river) systems, groundwater, glacial and desert systems.
- Students will review the structure of the Earth's interior, including crustal deformation (folding and faulting), seismological processes, and understand the Theory of Plate Tectonics and its importance in the origin of continents and ocean basins.
- Students will review the methods of determining relative and absolute geological time and review the major physical and biological events of geologic time.

Objectives

Student Learning Outcomes:

- Students will use critical thinking to recognize the rigorous standards of scientific theories.
- Students will analyze and synthesize geoscience data to draw scientifically valid conclusions.
- Students will recognize the different time scales associated with different geologic processes.
- Students will effectively communicate the importance of the interactions between humans and Earth's spheres.
- Students will apply their understanding of these geologic principles to complex issues.

Student Expectations of the Course

In this course, student may expect:

- To work with a qualified professor with graduate degrees in geology, who is committed to undergraduate education and hands-on experience.
- To be fully and clearly informed of all course requirements and expectations (due dates, study guides for exams, time allotted for laboratory work, etc.)
- To have an on-campus professor, readily available in-person, by phone, or e-mail, for consultation and review of any aspect of the course.
- To be motivated, challenged, and proficient in the interdisciplinary field of physical geology.

How Student Performance will be Measured

Student performance will be assessed by:

- 5 or 6, 100-point, in-class exams. Exams cover each major section of the course (no exams, including the final exam, are comprehensive)
- Up to 16 laboratory exercises. The point value of each lab varies, but the cumulative point value of all labs is approximately 200 points (equivalent to two exams). Lab work may include a local field trips (during normal class time), or optional local or regional field trips, to examine geological environments and processes.