

GEL 230 Environmental Geology

COURSE DESCRIPTION:

Prerequisites: GEL 111 with a C or better

Corequisites: None

This course provides insights into geologic forces that cause environmental changes influencing man's activities. Emphasis is placed on natural hazards and disasters caused by geologic forces. Upon completion, students should be able to relate major hazards and disasters to the geologic forces responsible for their occurrence. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics. Course Hours Per Week: Class, 3. Lab, 2. Semester Hours Credit, 4.

LEARNING OUTCOMES:

Upon completing requirements for this course, the student will be able to:

1. Demonstrate knowledge geologic hazards and the geologic environment.
2. Demonstrate the use of geo-physical principles through lab experiments.

OUTLINE OF INSTRUCTION:

- I. Geologic Foundations
 - A. An Overview of Our Planetary Environment
 - B. Rocks and Minerals
- II. Internal Processes
 - A. Plate Tectonics
 - B. Earthquakes
 - i. Types of earthquakes
 - ii. Earthquake hazards
 - C. Volcanoes
 - i. Types of volcanoes
 - ii. Volcanic hazards
- III. Surface Processes
 - A. Streams and Flooding
 - i. Stream processes
 - ii. Flood control measures
 - B. Coastal Zones and Processes
 - i. Coastal landforms
 - ii. Erosion control measures
 - C. Mass Movements
 - D. Ice and Glaciers, Wind and Deserts
 - E. Climate--Past, Present, and Future

- IV. IV. Resources
 - A. Water as a Resource
 - i. Water conservation
 - ii. Water pollution
 - iii. Water politics
 - B. Soil as a Resource
 - i. Soil formation review
 - ii. Soil erosion
 - iii. Soil pollution
 - iv. Soil conservation
 - C. Mineral and Rock Resources
 - i. Ores, gems and metals
 - ii. Mining and pollution
 - D. Energy Resources—Fossil Fuel
 - i. Fossil fuel formation
 - ii. Fossil fuel conservation
 - E. Energy Resources—Alternative Sources
- V. Waste Disposal, Pollution, and Health
 - A. Waste Disposal
 - B. Pollution and health impacts

REQUIRED TEXTBOOKS:

The textbook and other instructional material will be determined by the instructor or discipline chair.