

GEOLOGY (GLY)

GLY1010 PHYSICAL GEOLOGY (3.00 Credits)

Study of geologic agents, minerals, rocks, structure, and land forms. The effects of geologic events upon life and human relations are discussed. Students registering in GLY1010 are strongly urged to register in the companion lab GYL1010L.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

GLY1010L PHYSICAL GEOLOGY LABORATORY (1.00 Credits)

Study of common rocks and minerals forming the lithosphere, including their classification, origin and the interpretation of physical landforms through the study of geologic maps. One 2-hour laboratory weekly.

Total Contact Hrs: 32.00

Lab Hrs: 32.00

Fees: LABORATORY FEE \$17.00

GLY1100 HISTORICAL GEOLOGY (3.00 Credits)

A study of the origin and evolution of the Earth and the history of life on our planet. The course encompasses the causes and effects geologic change and the evolution of life, and the role of plate tectonics on the geologic and biologic evolution of Earth. Emphasis is placed on how and why past geologic and biologic changes occurred. Interpretations of Earth's past history are also used to help explain current events and predict future trends. Field trips are optional.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

GLY1100L HISTORICAL GEOLOGY LABORATORY (1.00 Credits)

This course utilizes activities to interpret the earth's geologic history and augments the topics covered in GLY1100. These exercises include a review of rocks and minerals, the interpretation of maps and aerial photography using principles to determine the sequence geologic events, an application of paleontologic data, the interpretation of depositional environments, the identification of stragraphic correlations, the interpretation of surface and subsurface structure, and the conducting of paleo-geographic exercises.

Total Contact Hrs: 32.00

Lab Hrs: 32.00

Complete all the courses in the following option:

- Pre or Corequisite: GLY1100 (minimum grade: C)

GLY4072C GLOBAL ENVIRONMENTAL CHANGE (3.00 Credits)

The Earth is viewed as a system of complexly linked, continuously changing, geologic, atmospheric, biologic, and chemical processes that are characteristic of a dynamic and evolving planet. These physical, chemical, and biologic changes (both natural and anthropogenic) are explored over a wide range of space and time scale. Prerequisite: Admission to Environmental Science BS program or permission of instructor.

Total Contact Hrs: 48.00

Lecture Hrs: 32.00

Lab Hrs: 16.00

GLY4203 ENVIRONMENTAL GEOLOGY AND LITHOSPHERIC PROCESSES (3.00 Credits)

A comprehensive study of the materials that make up the Earth's lithosphere, followed by addressing the linkage between surface and lithosphere geology and the Earth's physical environment. Emphasis is placed on recognizing geologically related environmental issues and the interactions between people and the Earth's physical environment.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

Complete all the courses in one of the following options:

- Option 1 - Prerequisite: GLY1010 (minimum grade: C)
- Option 2 - Prerequisite: ESC1000 (minimum grade: C)
- Option 3 - Prerequisite: GLY1100 (minimum grade: C)
- Option 4 - Prerequisite: PSC1121 (minimum grade: C)

GLY4731 COASTAL AND MARINE SCIENCE (3.00 Credits)

This course introduces students to physical, biological, and "man caused" processes that occur in the coastal environment. Marine forces that control sediment movement and morphology changes will be examined. These forces, acting on a coastal ocean environment are waves and currents with the latter being generated by waves, winds and/or tides. Together with biological processes and the active and passive action of humans from the Coastal and Marine Science. Topics to be covered include: tides, wave theory, wave and current measurements, wave hindcasting and forecasting, sediment transport, beaches and bars, sediment budget. The goal of the course is to make students aware of the most important physical and biological processes that act in the coastal environment and the role they play in shaping the coastline. After completion of the course students will be able to identify the most important relevant processes for a particular coastal environment (i.e., inner shelf, beach, tidal inlet, estuary), and apply quantitative formulations as related to an environmental and/or engineering study relevant to that environment.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

Complete all the courses in one of the following options:

- Option 1 - Prerequisite: GLY1010 (minimum grade: C)
- Option 2 - Prerequisite: ESC1000 (minimum grade: C)
- Option 3 - Prerequisite: GLY1100 (minimum grade: C)
- Option 4 - Prerequisite: OCE1001 (minimum grade: C)
- Option 5 - Prerequisite: PSC1121 (minimum grade: C)

GLY4820 HYDROGEOLOGY (3.00 Credits)

This course provide an introduction to the theory and principles of ground water flow as well as stream flow. Topics include the hydrologic equation, evapotranspiration, well drilling and testing, porosity and permeability, Darcy's law, confined and unconfined aquifers, water table maps, well logs, and hydrographs. An important aspect of the course is the geological control on groundwater. The movement of water from wells to Regional settings are explored. The mathematical equations used to describe groundwater flow are examined. Commonly used methods for measuring aquifer properties are discussed. Additional topics such as water law, aquifer contamination, and aquifer management will be introduced. Salt Water intrusion in Biscayne, FL or other similar examples will be examined. This course examines fluid flow through porous materials and the mathematics used to interpret hydraulic test data.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

Complete all the courses in one of the following options:

- Option 1 - Prerequisite: ESC1000 (minimum grade: C), Corequisite: GLY4820L
- Option 2 - Prerequisite: GLY1010 (minimum grade: C), Corequisite: GLY4820L
- Option 3 - Prerequisite: GLY1100 (minimum grade: C), Corequisite: GLY4820L
- Option 4 - Prerequisite: PSC1121 (minimum grade: C), Corequisite: GLY4820L

GLY4820L HYDROGEOLOGY LAB (1.00 Credits)

This course is designed to pair GLY4825. Students will learn to use instruments to determine physical, chemical, hydrologic and geologic factors that control the occurrence and dynamics of groundwater. Students will develop the ability to investigate groundwater systems and to solve simple problems in basic and applied hydrogeology.

Total Contact Hrs: 32.00

Lab Hrs: 32.00

Fees: LABORATORY FEE \$10.00

Complete all the courses in the following option:

- Pre or Corequisite: GLY4820 (minimum grade: C)