

## SCI 240: Introduction to Oceanography

This course is a study of the inter-relationships among geological, chemical, physical, and biological processes and systems in the world's oceans. Emphasis is placed on methods of the collection of oceanographic data as well as its interpretation and significance to the current world problems, including global climate change. The course is designed for students with a strong interest in the marine environment who have some preliminary background in one of the traditional areas of environmental science, namely biology, chemistry, or geology. Although the course does not require advanced mathematical skills, lab exercises may require simple computations, graphing, and map reading. Prerequisite: One semester of a college-level laboratory science with a grade of C or better, or completion of CHM 090 with a grade of B or better, or permission of the instructor. Three hours of lecture and two hours of laboratory per week. Instructional Support Fee applies. Gen. Ed. Competencies Met: Scientific Reasoning and Discovery.

### Course Student Learning Outcomes

1. Compare and contrast the interactions among the Earth's hydrosphere, atmosphere, geosphere and biosphere with respect to sources and sinks of gases, heat exchange, and the cycles of nutrients important to living organisms.
2. Compare and contrast the roles of plate tectonics, weathering and erosion on the shape and position of the continental masses and ocean basins with respect to the relative time scales and overall significance of each of these processes.
3. Summarize the overall contributions of surface currents and the thermohaline circulation to the distribution of salinity and temperature on a worldwide basis.
4. Evaluate the role of living organisms in the biosphere as contributors to the chemical nature of seawater, and explain their role in the recycling of gases and nutrients.
5. Predict how the Oceans may play an integral role in moderating climate change caused by the actions of natural forces and the specific actions of humans, as well as how climate change may lead to significant alterations in the size and shape of the ocean basins and the chemistry of seawater.
6. Compile scientific reports that demonstrate proper use of internet and library sources, as well as application of the scientific method to oceanographic data.

**Credits:** 4

**Program:** Science