Common Course Outline for: GEOL 1120 -- Oceanography

A. Course Description

a. 3 credit
b. Hours/Week: 3
c. Lab Hours/Week: 0
d. OJT Hours/Week: 0
e. Prerequisites: none
f. Co-requisites: none
g. MnTC Goals (if any): Goal 3 – Natural Science and Goal 10 – People and the Environment

Relationship between the physical, chemical, and biological characteristics of oceans, focusing on evolution of the oceans, biotic environments, dynamics of water movement, and the affect ocean processes have on humankind. This course includes a lab-like experience.

B. Date last Revised: Fall, 2011

C. Outline of Major Content Areas

a. Physical structure of ocean basins
a. Ocean evolution
b. Relationship between Earth and Ocean evolution
c. Sea water chemistry
d. Rifting zones and special biotic environments
e. Waves and tides
f. Ocean circulation
g. Energy resources
h. Pelagic vs. Benthic animals
i. Decomposition of organic matter
j. Nutrient distribution
k. Natural resources
l. Global weather patterns
m. Coastal storms
n. Oceans and global warming

D. Course Learning Outcomes

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

a. Define and explain the Earth's geologic systems both verbally and quantitatively including various components of the earth, their controls, their interrelationships, and their global regional distribution.
b. Articulate and explain the scientific theories that explain the ways that these geological components function and interact.
c. Define and explain common principles of oceanography.

d. Portray the fundamental interrelatedness of ocean systems and socio/cultural systems in terms of some of the way in which people affect the ocean environment and the ways in which humans adapt to natural systems.
e. Explain the basic structure of ocean basins and land-ocean configuration.
f. Explain major features of ocean circulation and the mechanics of waves and tides.
g. Explain the constraints of life in the oceans and describe some life forms.
h. Explain the role of oceans in the global climate system.
i. Discuss the past and present importance of oceans to humans.
j. Discuss the role of human interaction on the future use of oceans.
k. Discuss the role of humans on the use of ocean resources.
l. Communicate an understanding of the process of scientific inquiry as it relates to the Earth sciences, including the formulation of hypotheses, collection and analysis of data, and assessment of the validity of hypotheses and forecasts.

E. Methods for Assessing Student Learning

Instructors may use any or all of the following, but is not limited to:

a. Ungraded assignments intended to give the instructor immediate feedback
b. Unit exams
c. Final exam
d. Quizzes
e. Homework assignments
f. Writing assignments
g. In-class activities
h. Problem solving activities
i. Attendance requirements
j. Any other activities assigned

F. Special Information

a. Students should consult the course syllabus for specific grading policies.