

OHLONE COLLEGE
Ohlone Community College District
OFFICIAL COURSE OUTLINE

I. Description of Course:

1. Department/Course: BIOL - 141

2. Title: Marine Biology

3. Cross Reference:

4. Units: 3.00

Lec Hrs: 3.00

Lab Hrs: 0.00

5. Repeatability: No

6. Grade Options:

Grade Only (GR)

7. Degree/ Applicability:

Credit, Degree Applicable,
Transferable - CSU (T)

8. General Education:

District General Education (Plan A)

I. Natural Science

9. CAN Numbers:

10. Field Trips: Optional

11. Requisites:

Advisory

ENGL-151B Fundamentals of
Composition

12. Catalog Description:

This course covers basic concepts of marine ecosystems including oceanographic principles, ecology, and a survey of marine habitats and diversity of marine organisms. Enrollment is open to all students. No previous biology required.

13. Class Schedule Description:

Basic concepts of marine ecosystems; covers diversity of marine organisms, ecosystems and ecology.

14. Counselor Information:

This course is designed to fulfill the general education natural science requirement (without lab). This course is NOT about cute dolphins and turtles but an in-depth examination of biological principles at work in marine ecosystems.

II. Student Learning Outcomes

The student will:

1. Describe the chemical and physical properties of water
2. Describe the basic physiological processes shared by all living organisms
3. Describe the geologic processes that have shaped coastal areas around the world
4. Identify the major oceanic basins and the characteristics of each
5. Recognize major circulation and wind patterns and their affect on the distribution of marine organisms
6. Demonstrate an understanding evolution and natural selection
7. Identify marine organisms to Phylum and Class and have a basic understanding of their phylogenetic placement
8. Recognize key characteristic traits of different marine organisms
9. Describe the physical factors that characterize each type of marine environment
10. Identify adaptations of marine organisms to each type of environment
11. Identify basic ecological principles at work in the sea
12. Analyze the impact of human influence on marine ecosystems

III. Course Outline:

- A. Water properties:
 - 1. Chemical
 - 2. Reaction to temperature, pressure, light
- B. Physiology
 - 1. Respiration
 - 2. Photosynthesis
- C. Geology and Ocean Floor
 - 1. Origin of basins
 - 2. Plate tectonics
 - 3. Hot spots and islands
- D. Ocean basins
 - 1. Atlantic, Pacific, Indian, Arctic
- E. Oceanography
 - 1. Vertical motion and ocean layers
 - 2. Waves, currents and gyres
- F. Evolution and Natural Selection
 - 1. Ingredients of life
 - 2. Differential survival and reproduction
 - 3. Perpetuation of life, diversity
- G. Marine organisms
 - 1. Marine microbes
 - 2. Invertebrates
 - 3. Fish
 - 4. Reptiles, birds and mammals
- H. Marine Ecosystems
 - 1. Rocky Intertidal
 - 2. Estuaries
 - 3. Continental Shelf
 - 4. Coral Reefs
 - 5. Life near the surface
 - 6. Deep Sea
- I. Ecology
 - 1. Energy flow
 - 2. Community organization
 - 3. Ecological zonation
- J. Human impact
 - 1. Fishing
 - 2. Pollution

IV. Course Assignments:

Reading Assignments

Textbook and/or journal articles

Writing Assignments

Two short papers which may relate to field trips destinations.

One paper will focus on the diversity of marine organisms encountered. The second paper will consider some ecological question that will need to be researched.

Projects, Activities, and other Assignments

V. Methods of Evaluation:

- A. Quizzes, midterms, and final
- B. Multiple choice, True/False, Short Answer, medium answer with calculations
- C. Papers and assignments

Methods of Instruction:

Lecture

VI. Textbooks:

Required

1. Castro, P and Huber, M.E. *Marine Biology* 4th edition Edition, McGraw Hill Publishers, 2003

Optional

VII. Supplies:

1. Supplemental articles on reserve, handouts, internet websites (\$10)