Marine Biology

Text:	Marine Life, James L. Sumick (1996); 6th Edition, William C. Brown Publishing

Supplemental Materials:	Videos, Lab manuals.

Course Description:	Marine Biology is a semester course designed to teach students about the physical and biological aspects of the marine environment. Students will be expected to complete laboratory assignments in anatomy and physiology of several marine organisms. Marine biology students will also learn the characteristics of several local fish. Prior to taking marine biology, students should have completed biology and chemistry.

Methods of Evaluation:	Evaluation is based on tests, labs, periodic quizzes and homework assignments.

Course Objectives:	At the end of each of the following chapters, students should be able to: Chapter 1. 1. Define continental drift and explain how it has shaped the oceans. 2. Describe the concept of the world ocean and explain the chemical and physical properties of the ocean. 3. Identify the components of the ocean's profile. 4. Describe how waves affect the shoreline and identify the parts of a wave. 5. Identify the types of tides and currents. 6. Define upwelling and explain its importance to the marine environment. Chapter 2. 1. Identify the parts of a cell and explain their functions. 2. Compare and contrast sexual reproduction with asexual reproduction. 3. Describe osmosis and the conditions that affect it. 4. Compare homeotherms and poikilotherms. 5. Explain the relationship between each level in a trophic pyramid. 6. Compare the different types of symbiosis. Chapter 3. 1. Introduce students to the taxonomic levels with emphasis on oceanic organisms. 2. Learn the biology of the different divisions of phytoplankton. 3. Learn the special adaptations phytoplankton employ for

Course Objectives (Cont.):	protection from predators as well as from sinking. Chapter 4. 1. Learn the biology of the seaweeds and marine plants. Chapter 5. 1. Describe primary production as it occurs in the oceans by comparing phytoplankton with marine plants. 2. Compare gross primary production with net primary production and describe how to determine each. 3. Describe photosynthesis and explain the role of the photosynthetic pigments. Chapter 6. 1. Describe the biology of the different phyla of protozoans. 2. Describe the biology of the marine invertebrate phyla. Chapter 7. 1. Describe the characteristics of the chordates and especially the vertebrates. 2. Compare the biology of the three classes of fish. 3. Describe the biology of the three classes of marine tetrapods-reptiles, birds and mammals. Chapter 8. 1. Define the intertidal zone and discuss the characteristics of the region. 2. Compare epifauna with infauna. 3. Describe organism and sediment relationships. 4. Describe the different methods of larval distribution and their effectiveness. 5. Differentiate between the different intertidal communities.