Murrieta Valley Unified School District
High School Course Outline
December 2003

Department: Science

Course Title: Marine Biology

Course Number: 3010

Grade Level: 10-12

Length of Course: Year

Prerequisite: Life science with a grade of b or better and/or CP Biology with a grade of C or better

UC/CSU (A-F) Requirement: C

I. Goals

The student will:

A. Demonstrate proper laboratory skills and practices

B. Demonstrate an understanding of the metric system

C. Describe the world's major bodies of water

D. Demonstrate basic knowledge of the geography and geology of the oceans

E. Demonstrate Basic knowledge of the chemistry and physics of oceans

F. Analyze the relationship between oceans and the atmosphere

G. Understand the parts and processes of the cell

H. Demonstrate knowledge of the ecology and importance of our oceans

I. Understand the development and grouping of the scientific system of classifying organisms

J. Interrelate biological functions among the five kingdoms and organisms

K. Understand the major characteristics of the plant kingdom and representatives in the oceans

L. Understand the major characteristics of photosynthesis and respiration related to the plant kingdom

M. Explain and Identify invertebrate phyla in the marine environment

N. Explain and identify chondrichtheyes and osteichtheyes

O. Demonstrate interactions of reptiles and birds with marine environments

P. Study mammals found in oceans

Q. Compare anatomies of ocean mammals and humans

II. Outline of Content for Major Areas of Study

Semester I

A. Introduction to oceanography and Marine Biology

1. Fields of study
2. Scientific method

B. The Sea Floor

1. Basic geography of the world's oceans, bays and gulfs
2. Geography of ocean basins
3. Structure of the earth
4. Continental drift
5. Plate tectonics
6. Continental margins
7. Deep ocean

C. Chemical and physical features of the oceans

1. Motion and Waves
2. Tides
3. Currents

D. Building Blocks of Life
1. Cells and Organelles
2. Challenges of the sea(salinity, temperature, and pressure

E. Marine Prokaryotes

F. Protista

G. Marine Algaes and Plants

Semester II

A. Invertebrates
1. Porifera
2. Cnidaria
3. Worms
4. Mollusks
5. Arthropods
6. Echinoderms
7. Chordates

B. Marine Fishes
1. Osteichthyes
2. Chondrichthyes

C. Marine Reptiles and Birds
1. Sea turtles

2. Sea Snakes

3. penguins

4. shore birds

D. Marine Mammals

E. Marine Ecology

1. Ecosystem of the sea

2. Humans and the sea

III. Accountability determinants

A. Teacher observation of day-to-day classroom participation, effort, behavior, and achievement

B. Individual performance on laboratory

C. Formal lab reports

D. Individual performance tests, portfolios, and projects

E. Final assessment

IV. Required text(s)

Castro, Peter and Huber, Michael *Marine Biology*, 2nd Edition, DeSota, Texas: The McGraw-Hill Companies, 1997.