BIOL G104L: MARINE LIFE LABORATORY

Item	Value
Top Code	040100 - Biology, General
Units	1 Total Units
Hours	54 Total Hours (Lab Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	Yes
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 5C Laboratory Activity (5C)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 5C Laboratory Activity (5C)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B3 Laboratory Activity (B3)

Course Description

This course explores the basic principles of the life sciences taking its examples from the sea. The ecological relationship between humans and the sea is emphasized. Field trips are also an integral part of the course, focusing on the structure of marine ecosystem. This course is designed for non-science majors. PREREQUISITE: BIOL G104 or concurrent enrollment. Transfer Credit: CSU; UC.

Course Level Student Learning Outcome(s)

1. Course Outcomes
2. Classify and describe the diversity of marine organisms and ecosystems.
3. Evaluate the human impact on marine ecosystems and fisheries.
4. Interpret data and biological reports using evidence-based reasoning.

Course Objectives

- 1. understand the biota of the sea including planktonic forms, benthic organisms, and pelagic forms.
- 2. understand the patterns of distribution of marine life, particularly within the local Southern California area.
- 3. understand the ways in which marine biological investigations are conducted.

Lab Content

1. Introduction to Laboratory Procedures, Scientific Method/ Investigations-Problem Solving2. Physical and Chemical Properties of Seawater3. Use of the Microscope--A Survey of Living Plankton4. Benthic Plants and Kelp Forest Ecology5. Taxonomy--Protozoa, sponges, cnidarians6. Feeding mechanisms of Invertebrates7. Parts and types of Sea Shells Comparative Structures of Molluska-Marine Mollusks-Independent Investigations8. Practical Exam I9. Field Excursion - Bols Chica Wetlands10. Arthropods (11+/- 12 description)--Behavior exercises, Adaptations to Salinity11. Echinodermata12. Introduction to Marine Fishes-comparative taxonomy13. Field Excursion - Long Beach Aquarium of the Pacific/optional Southern California Aquaria14. Bird Lab (shore and pelagic)15. Practical #216. Marine Reptiles - Sea Turtle Debate17. Marine Mammals-Baleen whales18. Marine Mammal-Echolocation Lab19. Projects-Scientific Investigation Design

Method(s) of Instruction

- Lab (04)
- DE Live Online Lab (04S)
- DE Online Lab (04X)

Reading Assignments

Laboratory and Field Investigations in Marine LifeMarine Laboratory Exercises--Instructor Designed and Adapted for Marine Life 104L (Handouts)

Writing Assignments

A lab report is required each time the lab meets. The type of report depends upon the lesson. Writing and problem solving are required with each report. Drawings are made, but this is not an art class, and drawing skills are not graded for.

Out-of-class Assignments

Projects (individual or group) involving critical thinking, reasoning, and skills in data collection, correlation, conclusion.These projects involve using the lab equipment in the field-field studies conducted outside of the classroom(primarily in Bolsa Chica Wetlands and/or beach and intertidal regions.

Demonstration of Critical Thinking

Most of the critical thinking required for each lab exercise is deductive. Adaptive functions and value of structures and parts, cause and effect of adaptations for survival and other ecological complexities require growth in reasoning ability, however slow that growth may be.

Required Writing, Problem Solving, Skills Demonstration

A lab report is required each time the lab meets. The type of report depends upon the lesson. Writing and problem solving are required with each report. Drawings are made, but this is not an art class, and drawing skills are not graded for.

Eligible Disciplines

Biological sciences: Masters degree in any biological science OR bachelors degree in any biological science AND masters degree in biochemistry, biophysics, or marine science OR the equivalent. Masters degree required. Earth science: Masters degree in geology, geophysics, earth sciences, meteorology, oceanography, or paleontology OR bachelors degree in geology AND masters degree in geography, physics, or geochemistry OR the equivalent. Masters degree required.

Textbooks Resources

1. Required Sumich, J.L., Dudley, G.. Laboratory Field Investigations in Marine Life, 1st ed. McGraw Hill, 2005 Rationale: .

Other Resources

1. Lab Syllabus, ancillary handouts for Labs designed by instructor.