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. This course is designed for non-science majors and is recommended to meet the general education breadth requirements, or the natural science requirement with Biology G104.

JUSTIFICATION FOR COURSE:

PREREQUISITES:
- BIOL G104: Marine Life with a minimum grade of C or better or may be taken concurrently.

COREQUISITES:

ADVISORIES:

ASSIGNED DISCIPLINES:
- Biological sciences
- Earth science

MATERIAL FEE: Yes [X] No [ ] Amount: $6.00

CREDIT STATUS: Noncredit [ ] Credit - Degree Applicable [X] Credit - Not Degree Applicable [ ]

GRADING POLICY: Pass/No Pass [ ] Standard Letter [X] Not Graded [ ] Satisfactory Progress [ ]

OPEN ENTRY/OPEN EXIT: Yes [ ] No [X]

TRANSFER STATUS: CSU Transferable[ ] UC/CSU Transferable[X] Not Transferable[ ]

BASIC SKILLS STATUS: Yes [ ] No [X] LEVELS BELOW TRANSFER: Not Applicable

CALIFORNIA CLASSIFICATION CODES: Y - Not Applicable

NON CREDIT COURSE CATEGORY: Y - Not applicable, Credit Course

OCCUPATIONAL (SAM) CODE: E

REPEATABLE ACCORDING TO STATE GUIDELINES: No [X] Yes [ ] NUMBER REPEATS:

REQUIRED FOR DEGREE OR CERTIFICATE: No [ ] Yes [X]

Liberal Arts: Emphasis in Science(Associate in Arts)

GE AND TRANSFER REQUIREMENTS MET:

IGETC Area 5: Physical and Biological Sciences
- 5C: Laboratory Activity

CSU GE Area B: Scientific Inquiry and Quantitative Reasoning
- B3 - Laboratory Sciences
COURSE LEVEL STUDENT LEARNING OUTCOME(S) Supported by this course:

1. Recognize the biota of the sea.
2. Describe the patterns of distribution of marine life, particularly within the Southern California area.
3. Perform field and laboratory exercises that demonstrate understanding of the scientific method.

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.

COURSE CONTENT:

- **LECTURE CONTENT:**
- **LABORATORY CONTENT:**

1. Introduction to Laboratory Procedures, Scientific Method/Investigations-Problem Solving
2. Physical and Chemical Properties of Seawater
3. Use of the Microscope--A Survey of Living Plankton
4. Benthic Plants and Kelp Forest Ecology
5. Taxonomy--Protozoa, sponges, cnidarians
6. Feeding mechanisms of Invertebrates
7. Parts and types of Sea Shells Comparative Structures of Molluska-Marine Mollusks-Independent Investigations
8. Practical Exam I
9. Field Excursion - Bols Chica Wetlands
10. Arthropods (11+/= 12 description)--Behavior exercises, Adaptations to Salinity
11. Echinodermata
12. Introduction to Marine Fishes-comparative taxonomy
13. Field Excursion - Long Beach Aquarium of the Pacific/optional Southern California Aquaria
14. Bird Lab (shore and pelagic)
15. Practical #2
16. Marine Reptiles - Sea Turtle Debate
17. Marine Mammals-Baleen whales
18. Marine Mammal-Echolocation Lab
19. Projects-Scientific Investigation Design

METHODS OF INSTRUCTION:

- **Lab:**
- **Field Experience:**
- **Independent Study:**

INSTRUCTIONAL TECHNIQUES:

COURSE ASSIGNMENTS:

- **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.

- **Reading Assignments**
  Laboratory and Field Investigations in Marine Life
  Marine Laboratory Exercises--Instructor Designed and Adapted for Marine Life 104L (Handouts)
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.

METHODS OF STUDENT EVALUATION:
Midterm Exam
Final Exam
Short Quizzes
Written Assignments
Report
Projects (ind/group)
Problem Solving Exercises
Skills Demonstration

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.

TEXTS, READINGS, AND RESOURCES:

TextBooks:

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

LIBRARY:

Adequate library resources include:

Comments:

Attachments:
Attached Files