

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

Transfer Course A.A. Degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: BIOL 130 Marine Biology

UNIT VALUE: 4

MINIMUM NUMBER OF SEMESTER HOURS: 96

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: None

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

An introduction to marine biology with an emphasis on the adaptations, classification and ecology of marine organisms as well as current issues in marine biology. A survey of local marine organisms and habitats. Participation on field trips as scheduled is required. *Not open to students with prior credit in BIOL 131 or 131L.* CSU; UC*

SPECIFIC COURSE OBJECTIVES:

Upon successful completion of this course, the student will be able to:

1. Explain the scientific method and the importance and application it has to marine biology;
2. Describe the ocean environment in terms of geology, geography, chemistry and water movement;
3. Apply principles of taxonomy to marine life forms;
4. Identify major taxonomic groups living in the ocean;
5. Explain how marine ecosystems function;
6. Describe the major ecosystems of the ocean in terms of physical and biological characteristics;
7. Analyze the marine environment and marine species' adaptations to the most important environmental parameters;
8. Demonstrate an understanding of current global concerns and issues in the field of marine biology;
9. Progress to advanced studies in marine biology and professions in the marine sciences;
10. Analyze and identify preserved and live marine plants and animals;
11. Observe, analyze and recognize the marine ecological communities of Southern California.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

LECTURE

- I. Scientific method
- II. The Ocean Environment
 - A. Ocean Geology
 - B. Ocean Geography
 - C. Water Chemistry
 - D. Surface Currents & Waves
 - E. Tides & Deep Water Currents
- III. Evolution and Taxonomy of Marine Organisms
 - A. Protista, Fungi & Plantae
 - B. Invertebrates
 - C. Fish
 - D. Marine Reptiles and Birds
 - E. Marine Mammals
- IV. Marine Ecology
 - A. Rocky Shores & Sandy Shores
 - B. Estuaries & Mangroves
 - C. Kelp Forests
 - D. Coral Reefs
 - E. Epipelagic, Mesopelagic & Deep Sea
 - F. Hydrothermal Vents
- V. Human Impacts on the Marine Environment
 - A. Fisheries
 - B. Pollution
 - C. Introduced Species

LABORATORY

- I. Introduction to Scientific Method and Sand Crab Morphology
- II. Sand Crab Experiment and Analysis
- III. Salinity Experiments
- IV. Field Trip to the Rocky Intertidal Zone
- V. Marine Plankton and Algae
- VI. Field Trip: Intertidal Zonation Study
- VII. Marine Invertebrates - Survey and Identification
- VIII. Marine Fish - Survey and Identification
- IX. Field Trip: Fouling Community
- X. Photosynthesis Experiment
- XI. Field Trip: Hubbs Fish Hatchery, Carlsbad
- XII. Field Trip: Steven Birch Aquarium
- XIII. Field Trip: Estuary
- XIV. Feeding Preference Experiment Set-up
- XV. Feeding Preference Experiment Take-down and Analysis
- XVI. Final Lab Exam

REQUIRED READING:

Lecture:

Various independent readings may also be required by the instructor.

Castro, P and M. Huber. Marine Biology. 3rd Edition. Dubuque, IA: McGraw-Hill Publishing 2000.

OR

Sumich, J. Introduction to the Biology of Marine Life. 7th Edition. Dubuque, IA: McGraw-Hill Publishing 1999.

OR

Nybakken, J. Marine Biology. 5th Edition. San Francisco, CA: Benjamin Cummings Publishing 2001.

Laboratory:

Readings assignments required for the lab will include instructions and background for laboratory assignments and will be provided by the instructor.

OR

Sumich, J. and G. Dudley. Laboratory and Field Investigations in Marine Life. West Coast Version. 6th Edition. Dubuque, IA: W. C. Brown Publishing, 1996.

SUGGESTED READING:

Extensive reference material is available in the library to supplement course presentations and required text readings.

REQUIRED WRITING:

Writing assignments may include review of articles and audio visual materials, analysis of data, a poster presentation of an appropriate marine biological topic and other assignments. Laboratory writing assignments may include scientific reports and other assignments. Writings for the semester will total a minimum of ten pages.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes. Outside assignments include studying lecture notes, writing assignments, reading text, preparation for examinations, and preparing a poster assignment.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

DISTANCE LEARNING:

This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply:

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

Evaluation of students may include quizzes, examinations, laboratory reports, and other assignments, such as oral and written reports. Three-fourths of the course grade is determined by assessments within the lecture component, and one-fourth by assessments within the laboratory component. In the lecture component, at least 70% of the grade is determined by examinations and up to 30% by other assignments. In the lab component, at least 25% of the grade is determined by examinations or quizzes and up to 75% by assignments.

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes No Number of times course may be taken for credit: 1

If yes. Identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

CONTACT PERSON: Elizabeth Lowe x2874

SIGNATURE ON FILE