BI 142 : INTRODUCTION TO MARINE BIOLOGY

Transcript title
Introduction to Marine Biology

Credits
4

Grading mode
Standard letter grades

Total contact hours
60

Lecture hours
30

Lab hours
30

Course Description
Examines the physical, chemical, and biological aspects of the marine environment with emphasis on the ecology, biodiversity, sustainability, and conservation of marine resources.

Course learning outcomes
1. Describe the unique chemical and physical characteristics of marine environments.
2. Identify and classify marine organisms by evolutionary and functional relationships.
3. Describe the ecological principles that explain the structure and function of marine ecosystems.
4. Sustainability outcome: Explain the interconnections of environmental, social, and economic systems in the context of marine biology.
5. Use quantitative scientific techniques to describe the marine environment including interactions between organisms and/or the physical environment.
6. Collect, analyze, interpret, and communicate scientific data.

Content outline
1. Lecture Topics
    a. Chemistry and Physics of Oceans
        i. Geography of Ocean Basins and Seas
        ii. Geology of Ocean Basins and Hydrothermal Vents
        iii. Chemical and Physical Properties
        iv. Ocean Circulation, Gyres, and Plastics
        v. Waves, Tides, Tsunamis, and Invasive Species
    b. Marine Organisms and Threats to Health
        i. Microbes
        ii. Algae and Seaweeds
        iii. Invertebrates and Sea Star Wasting Disease
        iv. Fishes and Habitat for Reproduction
        v. Reptiles and Birds and Ingestion of Plastics
        vi. Marine Mammals and Tourism
    c. Marine Ecology
        i. Trophic Pyramids and Food Webs
        ii. Sustainable Fisheries
        iii. Ocean Acidification
        iv. Ocean Warming
        v. Eutrophication, Hypoxia, and Dead Zones
        vi. Oil Pollution
2. Lab Topics
    a. Data collection experiences in a simulated or actual coastal marine system
    b. Data-based analysis, interpretation, and determination of logical conclusions from evidence
    c. Independent marine organism research project and presentation

Required materials
Course may require a printed course-pack, marine biology textbook, or attendance on a multi-day field trip to the Oregon Coast.

General education/Related instruction lists
- Science Lab