

# BI 142 : INTRODUCTION TO MARINE BIOLOGY

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## 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

- Lecture Topics
  - Chemistry and Physics of Oceans
    - Geography of Ocean Basins and Seas
    - Geology of Ocean Basins and Hydrothermal Vents
    - Chemical and Physical Properties
    - Ocean Circulation, Gyres, and Plastics
    - Waves, Tides, Tsunamis, and Invasive Species
  - Marine Organisms and Threats to Health
    - Microbes
    - Algae and Seaweeds
    - Invertebrates and Sea Star Wasting Disease
    - Fishes and Habitat for Reproduction
    - Reptiles and Birds and Ingestion of Plastics
    - Marine Mammals and Tourism

- Marine Ecology
  - Trophic Pyramids and Food Webs
  - Sustainable Fisheries
  - Ocean Acidification
  - Ocean Warming
  - Eutrophication, Hypoxia, and Dead Zones
  - Oil Pollution
- Lab Topics
  - Data collection experiences in a simulated or actual coastal marine system
  - Data-based analysis, interpretation, and determination of logical conclusions from evidence
  - 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