UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Fundamentals of Marine Biology

2122-1-F7502Q037

Aims

This course examines different biological and ecological aspects and processes of ocean ecosystems. Topics include the distributions, abundances, life habits and interactions of marine organisms characterizing the main zones and the different systems of the marine environment. The impact of multiple stressors and the problems affecting the marine habitats are also discussed.

Contents

Processes of marine organisms, Marine systems and habitats, Functioning of Marine Ecosystems

Detailed program

Introduction to the course

What is marine biology and why it matters; history of marine biology; the scientific method

Patterns in the marine environment

Biogeography, biodiversity, abundance and size

The marine environment

World oceans; structure of the ocean floor; chemical and physical properties of seawater; ocean circulation; life in a fluid medium; primary and secondary production

Classification and characteristics of the marine environments

General classification of marine environments; benthic life habits; benthic environments: tidelands (rocky shores, soft-substratum shores, marshes, mangroves, estuaries); sea grass beds, seaweed and kelp forests, rocky reefs, coral reefs; continental shelf seabed; deep sea; polar regions; pelagic environments and pelagic life habits

Introduction to impacts

Fisheries and aquaculture; pollution and climate change; conservation

Present and future of marine biology

Main recent lines of research in marine biology

Seminars – to be defined

Prerequisites

None

Teaching form

Lessons (4 credits - Dr. Davide Maggioni)

Tutorials (2 credits - Dr. Davide Seveso)

Textbook and teaching resource

PowerPoint slides

Marine Biology: Function, Biodiversity, Ecology (3°edition). Jeffrey S. Levinton, Oxford University Press

Marine Ecology: Processes, Systems, and Impacts (2° edition). Michel J. Kaiser et al., Oxford University Press

Marine Biology (10° edition). Peter Castro & Michael E. Huber, McGrow Hill Higher Education

Semester

First semester

Assessment method

Oral examination

Mark range: 18-30/30

Office hours

By appointment by sending an email to the lecturer