UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Introduction To Ocean Geography

2122-3-E3401Q053

Aims

To acquire the knowledge of the main biotic and abiotic components in marine systems; acquire an adequate skill in the reading of bathymetric and bathymorphological maps and the knowledge of key research methods for marine geology and submarine geomorphology

Contents

Introduction to the marine environment in its various components.

Main physical, chemical and biological characteristics of water masses; Techniques of observation, measurement and sampling of water masses.

Marine sediments: nature, composition and origin of terrigenous, volcanoclastic, neritic, pelagic, hydrothermal and authigenic sediments.

The seafloor: physiography, geomorphology and processes: analysis and sampling techniques.

Detailed program

Physical, chemical and biological characteristics of the water masses: insolation, temperature, salinity, density, horizontal and vertical circulation, waves, tides, dissolved gases (O2 and CO2), nutrients, primary production. Organic matter in the marine environment and the C cycle. Measuring and sampling the water column and assessing biogeochemical fluxes (CTDs, rosettes with sampling bottles, sediment traps).

Nature and origin of marine sediments: lithogenic, volcanogenic, neritic, pelagic, hydrotemal, authigenic sediments.

Seafloor sampling techniques: grabs, box-corers, multi-corers, gravity and piston corers; ocean drilling for scientific research.

Geology and oceanographyc explorations. Fundamentals of submarine geomorphology. Marine physiographic provinces and their large morpho-structural units. Continental margins and ocean basins.

Technologies of observation and sampling of the marine system. Ship positioning and navigation. Acoustic seafloor mapping.

Prerequisites

Paleontology (for students in Geological Sciences)

Teaching form

Lectures

Textbook and teaching resource

Recommended text: Trujillo and Thurman, 2011. Essentials of Oceanography. 10th Edition. Prentice Hall

Slides of lessons provided by the teacher on e-learning

Semester

second semester.

During the COVID-19 restrictions, the lessons will be recorded and available online, with some live events that will be planned and communicated on e-learning

Assessment method

Four self-assessment tests (multiple choice and true/false quiz) on the different themes explained in classes, to be done on e-learning. The tests will be available throughout the semester and must be passed to access to the oral examination.

Oral examination: 2 open questions related to the themes explained during classes.

During the Covid-19 restrictions the oral exams will be exclusively through the WebEx platform. A public link will be posted on the Geobiology e-learning page for the access of virtual public.

Office hours

Any time, upon request by e-mail followed by confirmation by the professor