UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Applied Geomorphology and Habitat

2627-1-F7504Q011

Aims

The course aims to provide students with:
(D1) theoretical knowledge of traditional and advanced techniques used to characterize, map, and model the distribution and extent of marine benthic habitats;
(D2) practical skills in the production of thematic maps of the seafloor showing the distribution of benthic habitats, through the processing of field-acquired data;
(D1–D2) the ability to identify and classify, where appropriate, the main types of marine bioconstructions, and to recognize dominant bioconstructors;
(D3) independent judgment in interpreting the relationships between bioconstructors and abiotic factors, within an integrated and ecosystem-based approach;
(D5) autonomous learning abilities related to habitat-mapping techniques and habitat-based marine cartography.

Contents

This course deals with the geomorphological and geobiological characterization of benthic habitats, with an emphasis on marine benthic bioconstructions of the temperate Mediterranean Sea and the shallow water tropical reef environments. It focuses on field and remote observations of characteristic habitats and their multi-scale relationships with the associated abiotic components. Environmental issues, related to the role of habitat mapping and monitoring in marine ecosystem management, are explained and discussed using case histories.

Laboratory activities will offer the students the opportunity to use traditional methods and techniques for mapping and modelling the distribution of marine benthic habitats.

Detailed program

Introduction to biogeomorphology: interplay between organisms and geomorphology in submerged environments. Mediterranean marine bioconstructions: from the shallow shelf to the bathyal zone. Examples of bioconstructions from tropical reef environments.

Applied submarine geomorphology for ecosystem-based management: the role of habitat mapping.

Habitat mapping, characterization and classification. The use of surrogates in habitat mapping practice. Habitat suitability models. Habitat mapping and ecosystem-based management.

Lab activities: Habitat mapping and habitat characterization techniques. Lab activities will be in the UNIMIB informatic laboratories using softwares supplied by the University of Milano-Bicocca.

Prerequisites

Introduction to Marine Physical Geography, Geobiology, Invertebrate zoology (base level) or systematic and general Palaeontology

Teaching form

14 two-hour lectures, on-line via webex, Delivered Didactics (2 + 2 CFU - 28 hours in total)

8 three-hour lab activities, in person, Interactive Teaching (2 CFU - 24 hours in total)2 attività di laboratorio da 4 ore in presenza, Didattica Interattiva

Textbook and teaching resource

Seafloor Geomorphology as benthic habitat. 2011. Ed. by P.T.Harris and E.K. Baker. Elsevier.

A selection of scientific journal articles will be provided by the teachers.

Semester

Second

Assessment method

Practical test and oral examination:
The practical test will be on habitat mapping techniques working on data and documents provided by the teachers. The practical test consists of writing a **final report to be delievered at least one week before the official date of the exam**.

2 oral tests: brief discussion of the content of the lectures. Each practical test will focus on topics covered in the lessons (one oral test on mapping techniques and one on habitats) and a discussion of any critical points found in the practical test.
Grades are given as n/30. The minimum pass mark is 18/30. In particular, the final grade will be given by the average of the practical test and the 2 oral tests.

Office hours

To make an appointment, please contact the teachers by e-mail:

alessandra.savini@unimib.it

daniela.basso@unimib.it

Sustainable Development Goals

CLIMATE ACTION | LIFE BELOW WATER