UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# SYLLABUS DEL CORSO

# Habitat mapping for ecosystem-based management of the deep sea

**2223-128R-06**

## Title

Habitat mapping for ecosystem-based management of the deep sea

## Teacher(s)

Alessandra Savini
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## Language

English

## Short description

Marine habitat mapping is based on a series of state-of-the-art methodologies applied in the field that can directly support ecosystem-based management of the marine environment and help provide essential elements for conducting integrated ecosystem assessments. Advances in mapping techniques, especially in the deep environment, strongly depend on evolving technological and environmental modelling capabilities, as well as conservation objectives and policy priorities within a spatial planning framework. In fact, there are implicit and

explicit links between the characterization, classification and mapping of habitats, which are strictly connected to the management objectives. Political objectives such as sustainability, ecosystem health, or the design of marine protected areas are therefore dependent on the procedures and techniques that are adopted to resolve the spatial connotations of marine habitats and to acquire information critical to the definition of their ecological functionality. The course aims to offer an overview of the most technologically advanced tools that allow a multiscalar characterization of benthic habitats of deep environments and of mapping approaches based on the generation of predictive models (i.e .: Habitat Suitability Modelling). Particular emphasis will be given to the presentation of data acquisition protocols to be used when using wire-guided marine vehicles (remotely operated vehicles) and to predictive modelling of the distribution of depth habitats based on the application of IT techniques such as Deep Learning and Object-Based Image Analysis. (OBIA). These aspects will be treated by showing how the techniques and procedures adopted are strongly linked to the needs of the current political context, with particular reference to the issues of the Marine Strategy Framework Directive.

## CFU / Hours

1CFU/8 hours
4 hours frontal lectures
4 hours of practical activities

## Teaching period

June 2023

## Sustainable Development Goals

INDUSTRY, INNOVATION AND INFRASTRUCTURE | CLIMATE ACTION | LIFE BELOW WATER