UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Marine Vertebrate Zoology

2425-1-F7502Q012

Aims

The course aims to allow students to: 1) recognize and be able to classify the major groups of marine vertebrates in the wild; 2) learn specialized terminology and basic concepts of the zoology of these groups of organisms; 3) understand the anatomy and physiology of the internal and external structures that characterize marine vertebrates and which, in the case of reptiles, birds and marine mammals, have allowed secondary adaptation to the aquatic environment; 4) know their state of conservation and what measures have been or will be adopted for their safeguard; 5) deepen the various methodologies used for the study of these organisms in nature.

Contents

The course covers marine vertebrates' systematics, evolutionary history, anatomy, physiology, behavior, conservation and research.

Detailed program

This course is delivered in 21 classes, the majority of which consist of frontal lessons (Didattica Erogativa, DE) while 6-8 meetings consist of seminars presented by national/international researchers invited by the teacher and which offer the possibility of experiencing first-hand practical aspects of research on marine vertebrates and which conclude with a moment dedicated to questions and open debate (Interactive Teaching, (DI).
This course is an introduction to the biology of marine vertebrates. It is structured in two parts. The first concerns the biology of marine vertebrates (fishes and marine birds, reptiles and mammals) and deals with a sample of the main taxonomic classes, their evolutionary history, biology, including anatomy and physiology, adaptation to the aquatic environment, behavior, ecology and conservation. Particular emphasis is given to marine mammals, the teacher's decades-long field of study. The second part describes the main research approaches used for the study

of marine mammals, accompanied by an extensive review of case studies.
The course is accompanied by seminars held by national and international guests who study marine vertebrates using different approaches, this in order to provide concrete examples of research, open up to the international academic system and create new connections in the eventual perspective of thesis and internships.

Prerequisites

Basic biology notions

Teaching form

42 hours of lectures and seminars held by experts in the various topics covered. Depending on the number and availability of speakers (which are renewed every year), the course is divided as follows:
13-15 frontal lessons of 2 hours each (Delivered Teaching, DE)
6-8 2-hour seminars including a question and answer (Q&A) session 15-30 minutes of discussion (Interactive Teaching, DI).

Textbook and teaching resource

Source material can be found in the following books:

"Sharks of Maldives" by De Maddalena A, Editoriale Magenes

"FishBase", Froese R and Pauly D, www.fishbase.org

"Marine Vertebrate Zoology - Ichthyology - Course Notes" by De Maddalena A.

“Marine Mammals Evolutionary Biology” by Berta A and Sumich JL, Academic Press
“ Biology of Marine Mammals” by Reynolds JE and Rommel SA, Melbourne University Press

“Marine Mammals of the World. Systematics and Distribution" by Dale W. Rice, Special Publication N4, The Society for Marine Mammalogy

"Conserving Whales, Dolphins and Porpoises in the Mediterranean Sea, Black Sea and adjacent areas. An ACCOBAMS status report 2021" Notarbartolo di Sciara G, Tonay AM

Semester

II Semester: March to May 2025

Assessment method

Written and oral exam (same day).

A written test (normally 7-10 multiple choice questions) will be followed by some questions on the topics covered during the course.

The following skills are assessed: 1) preparation on the exam program (written and oral test); 2) ability to independently reflect on critical points of the program (oral test); 3) ability to make connections between different topics that present similarities (oral test); 4) control of disciplinary problem solving skills (oral test); 5) communication skills.

Office hours

Mondays from 11.00am till noon, by appointment.

Sustainable Development Goals

LIFE BELOW WATER