UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Zoology

2425-1-E1301Q011

Aims

The main aim is to observe the organization, functioning and evolution of the animals.

In particular:

1. Knowledge and understanding The student will gain knowledge about the organization of animal bodies, how they works and the evolutionary origins.

2. Applying knowledge and understanding The student will be able to isdentify the main animal groups and to know the basic of their functions.

3. Making judgements The student will be able to process the acquired knowledge in the recognition and functioning of animals.

4. Communication skills Use of an appropriate scientific vocabulary and show ability in oral reports.

5. Learning skills Skills in reading and understanding the subsequent studies when the prerequisite is the knowledge of how the animal body works.

Contents

Zoology is the study of animals. There are many way to study zoology. The course of Zoology in our degree is not particularly focused on taxonomy, that is obviously present, but limited at the essential aspects. The focus of the course is instead the evolution of the body plans of animals. The course could be considered as a comparative zoology, in which each system will be observed during its evolution in the natural history of living beings.

Detailed program

Introduction. What is zoology?
Evolution of living beings. Homology and analogy.
Evolution of multicellularity.
Animal bauplan. Models of body evolution in Metazoa. Symmetry. Body cavities. Metamery. Cephalization.
Animal diversity: "protozoans"; poriferans; appearance and evolution of multicellularity; cnidarians; ctenophores; flat worms; pseudocoelomate (nematodes and rotifers); mollusks; annelids; panarthropods; lophophorates; echinoderms; origin and evolution of chordates; evolution of vertebrates.
Comparative zoology. Evolution and differentiation of systems.

Prerequisites

Basic knowledges in biology, cytology and histology.

Teaching form

Frontal lessons and practical laboratories (mandatory).

There are 28 lessons. Most of them are frontal lessons with few of them that will be given with the direct involvment of the student (i.e. flipped classroom).

There are 3 laboratory experiences in interactive way for a total of 10 hours.

Tutoring available.

There is the possibility to video record the lessons.

In addition, students will be supported with recorded materials by the teacher. These further lessons will be made available through the e-learning platform.

Textbook and teaching resource

Text book: Casiraghi et al. “Zoologia” – UTET - De Agostini.
Better in its second edition.

Diapositives and videos shown at lessons available on the e-learning platform.

For a better study it is better to observe many animal and structure photographs. It is easy to get those images using the image search in all the browsers and YouTube.

To study the Italian biodiversity:

Many infos about evolution are available here:

Semester

First semester

Assessment method

Normal examination: there are two written tests during the teaching period (shedule will be provided during lessons).
Tests are open for previous years students and for students not attending the lessons.

These tests are an opportunity, but they are not mandatory.
For all the students there will be an oral examination (that could be lighter for those who have done the written tests.

The oral exam starts from at least 2 photos of animals (generally a protostome and a deuterostome). The student has to establish to which group the animal belong and to define the general characteristics of that. There are then 2 further questions on general aspects of the program relative to the physiology and evolution of living beings.

Office hours

On appointment; mail to: maurizio.casiraghi@unimib.it

Sustainable Development Goals

LIFE BELOW WATER | LIFE ON LAND