Universitat Autònoma de Barcelona

2017/2018

Biology and Diversity in Non-Arthropod Invertebrates

Code: 100848
ECTS Credits: 6

Degree	Type	Year	Semester
2500251 Environmental Biology	OT	4	0

Contact

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Use of languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Other comments on languages

Part of the course is taught in Catalan and part in Spanish.

Teachers

Francesc Xavier Munill Bernardich

Anna Soler Membrives

Prerequisites

It is highly recommended to review the general concepts of Zoology and the characteristics of the main groups of invertebrates-non-Arthropoda studied in previous courses.

Objectives and Contextualisation

Throughout this course, student will acquire a vision as complete as possible of Zoological knowledge bases and the diversity of non-arthropod invertebrate animals from anatomical, functional, systematic and phylogenetic perspectives.

Equally, student will be able to situate each animal group in an ecological context, in relation to the number of species, habitat and way of life, position within the ecosystems as well as their importance in relation to their interest in applied sciences and of the environment and economics.

Content

I. INTRODUCTION

1. Introduction and Phylogeny: Evolutionary and phylogenetic history of the group of non-Arthropod Invertebrates. Traditional classifications and recent evolutionary hypotheses.

2. Diversity of non-Arthropod Invertebrates: Major and minor groups. Groups with doubtful phylogenetic position.

II. BIOLOGY AND DIVERSITY OF MAJOR AND MINOR GROUPS

3. Cnidarians and related groups. Phylum Ctenophora. Characteristics, classification and diversity. Phylogenetic relationships.

4. Platyhelminthes and related groups: Phylum Acoelomorpha. General characteristics of Acoela and Nemertodermatida. General characteristics, biology and diversification of groups.

5. Platyzoa groups: Phylum Gastrotricha. Phylum Acanthocephala. Phylum Gnathostomulida. Phylum Cycliophora. Phylum Entoprocta or Kamptozoa. General characteristics, biology and relationship with major groups.

6. Ecdysozoa groups: Phylum Kinorhyncha. Phylum Priapulidae. Phylum Loricifera. General characteristics, biology and diversification of groups.

7. Nematodes and related groups. Phylum Nematomorpha. Biology and diversity.

8. Annelids and related groups. Phyllum Pogonophora. Phylum Myzostomide. Phylum Echiura. Phylum Sipunculida. General characteristics, biology and diversification of groups.

9. Echinoderms and related groups. Phyllum Hemichordata. General characteristics, biology and diversity of the group.

II. ADAPTATIONS TO DIFFERENT ECOSYSTEMS

10. Adaptations to the marine environment: Diversity, main adaptations. Mechanisms of fixation and osmoregulation. Competition for space, food and reproduction in these ecosystems.

11. Adaptations to freshwater ecosystems: rivers, lakes and standing water. Diversity, main adaptations. Variations in reproduction, modes of resistance and locomotion of the different groups.

12. Adaptations to terrestrial ecosystems: humid and dry environments. Diversity, main adaptations. Different strategies of reproduction and locomotion depending on the humidity of the ecosystem.

PRACTICE PROGRAM

Field Practices: Field practices are conducted to study organisms in the marine environment.

Laboratory Practices: Identification of organisms in an ecosystem. Identification and classification of non-Arthropod Invertebrates. Methods in laboratory work. Use of non-Arthropod Invertebrates to the applied sciences.