

## Invertebrates taxonomy (IInd Year of study, Ist Semester)

Credit value (ECTS) 5

### Course category

Domain (Imposed)

### Course holder:

Assist. Prof. Dr. Florentina Manuela Miron

### Discipline objectives (course and practical works)

Study of the biology and taxa of invertebrates organisms.

Special attention is given to the general characters, morphology, internal organization and taxonomy of main groups of animals: Phylum Protozoa, Division Diblastica [Porifera, Cnidaria, Acnidaria], Division Triblastica [Plathelminthes, Nemathelminthes, Annelida, Mollusca, Arthropoda, Echinodermata].

Practical works seek to familiarize students with technical work in animal biology laboratories and knowledge of general notions relating to taxonomy, morphology, physiology and reproductive particularities of the main groups of animal biology with implications on the biomanipulating of the environmental factors in the purpose of obtaining the natural reefs like supplementary trophical resources, from aquatic organisms.

### Contents (syllabus)

Course (chapters/subchapters)
The science of animal biology. the animal kingdom. zoological clasification. Animal notion, the species . The actual animal clasification system.
<b>Philum protozoa.</b> Basic notions. Organization. Biology. Clasification.
<b>Diploblastic metazoans.</b> The sponges. Radially Symetrical animals: Cnidarians. Ctenophorans. General Characters. Clasification.
<b>Triploblastic acoelomates metazoans. Platyhelminthes: (bilaterally symetrical flatworms). Turbelariata. Trematoda. Cestoda.</b> General Characters. Clasification
Nemathelminthes: <b>Nematoda. Free-living and parasitic roundworms.</b> General Characters. Clasification.
<b>Triploblastic coelomates metazoans protostomiens. mollusks:</b> Gasteropoda. Lamelibranchiata. Cephalopoda. General Characters. Clasification.
<b>Anelids (segmented worms):</b> Polichaeta. Oligochaeta. Achaeta. General Characters. Clasification.
<b>Arthropods:Chelicerata</b> : General Characters. Clasification. <b>Mandibulata:</b> Crustacea, Miriapoda. General Characters. Clasification.
<b>Mandibulata:</b> Insecta. General Characters. Clasification.
<b>Triploblastic metazoans celomates. deuterostomiens. Echinodermata:</b> General Characters and echinoderms clasification

<b>Practical works</b>
The technical measures with specific apparatus in Biology laboratory. Optical microscope and binocular. Some General Features of Animal. The classification of Animals.
PROTOZOANS. Microscopical structure of the animal cell. The biology of protozoans. The nutrition, the locomotion, the reproduction. Slides: Balantidium, Trypanosoma, Trichomonas, Eimeria, Nosema, Sarcocystis
DIPLOBLASTIC METAZOANS. Sponges. Structural types: Ascon-Sicon-Leucon. Cnidarians: jellyfish, hydra, corals, sea anemones
ACELOMATIC TRIPLOBLASTIC METAZOANS. Examples of trematods: Fasciola hepatica. Dicrocoelium lanceolatum. General organization. Biological cycle. Cestoda: Taenia saginata; Ligula intestinalis. General organization. Biological cycle. Larvae forms of solitary worms: egg-oncosphaerae-cisticercus. Slides, photos, Video projection
Nemathelminthes: Nematoda: Examples of nematods: Ascaris suis; Oxyuris vermicularis; Trichinella spiralis. Biological cycle. Free living worms.
CELOMATIC TRIPLOBLASTIC METAZOANS PROTOSTOMIENS. Annelida: Examples of Polichaeta: Nereis diversicolor. Example of Oligochaeta: Lumbricus terrestris. Structure. Reproduction. Example of Achata: Hirudo medicinalis; Structure. Reproduction. Particularities.
Mollusks : Example of Gastropoda: Helix pomatia. General structure. Example of Lamelibranchia: Anodonta cygnaea. Example of Cephalopods.
Example of Arachnida: Acariens: Ixodes ricinus; Sarcoptes scabiei; Demodex canis. Examples of crustaceans: Cladocera: Daphnia; Copepoda: Cyclops, Ergasilus. Examples of macrocrustaceans: racul de râu. Structure, organization, biology.
Insects. Types of buccal apparatus. External morphology: Melolontha melolontha Ord. Aphaniptera: Ctenocephalus canis; Ord. Heteroptera: Cimex lectularius; Ord. Mallophaga. Differential structure, biology.
Insects. Ord. Anoplura. Ord. Diptera-Fam. Culicidae-; Fam. Tabanidae-tăunii; Fam. Muscidae-muşte; Fam. Sarcophagidae; Fam. Oestridae. Ord. Blattaria-; Ord. Hymenoptera- Fam. Apidae; Ord. Lepidoptera- Fam. Bombycidae. Head appendage define Key groups, external features

## **Bibliography**

1. L. Miron, Manuela Miron, 2007, "Biologie animală", Ed. Performantica Iași, 193 p.
2. Miller Harley, 2007 (seventh edition), "Zoology", Ed. McGraw-Hill International Edition, 588 p.
3. Pisiță Constantin et al., 1983, "Zoologia Nevertebratelor" Ed. Didactică și Pedagogică București 378 p.
4. P. Raven & G. Johnson, 2000, "Biology", Ed. WCB McGraw-Hill, Boston 1285 p.
5. Winfried Ahne et al., 2000, "Zoologie" Lehrbuch für Studierende der Veterinärmedizin und Agrarwissenschaften, Ed. Schattauer, 342 p.
6. Willis Johnson, Louis Delaney, Eliot Williams, Thomas Cole, 1977, "Principles of Zoology", Ed. Holt, Rinehart and Winston, 747 p.

## Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Oral examination	60%
Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	40%

## Contact

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