Code: 1664 **Animal Biology**
Degee: 1st cycle - Biology
Curricular Year: 2nd **Semester Course: 1st**
Credits: 8 ECTS **Compulsory**
Language: Portuguese/English
Prerequisites: Botany and Zoology
Responsible: Manuela Rodrigues Branco Simões
Other lecturer(s): Maria Teresa Marques Ferreira da Cunha Cardoso, José Carlos Franco Santos Silva and Elisabete Tavares Lacerda de Figueiredo Oliveira
Web Site: http://www.isa.utl.pt/home/node/3951

1. Contact hours:
Lectures 42 **Praticals/Laboratory** 42 **Others** 28 **Total** 112

2. Objectives:

To understand the evolution of animal systems and its adaptations to different life styles and environmental conditions.
To understand the rules and methods of animal philogenetic classification.
To know the morphological, anatomical, physiological and behaviour characteristics of the main animal phyla and classes and its relation with environment and biotic interactions.

3. Programme:

Kingdom Metazoa or Animalia: Origin, diversity and phylogeny. The structural body plan of animals (bauplan). Hierarchical organization of animal diversity.
Taxonomic principles and the history of Zoological Classification. The International Code of Zoological Nomenclature.
Paleozoology. The Cambric explosion and the principle periods of extinction and radiation: causes and impacts on biodiversity.
Main divisions of the Animal Kingdom (Radiata and Bilateria). Principles and patterns of embryonic development.
Characterization of the main invertebrate taxa Porifera, Cnidaria, Platyzoa (filos Gastroticha, Rotifera, Plathyhelminthes), Lophotrocozoa (filos Brachiopoda, Annelida, Mollusca), Ecdysozoa (filos Nematoda, Onychophora, Tardigrada, e Arthropoda), Annelida e Echinodermata..
Comparative study of the biology of terrestrial invertebrates, with particular emphasis in phylum Arthropoda (Ecdysozoa): i) Nutrition and metabolism (digestive, excretory, circulatory and respiratory systems); ii) Reproduction: reproductive system; reproductive strategies; life and biological cycles; iii) Nervous and sensorial, tegument and endocrine systems; iv) Behaviour.
Comparative study of the marine invertebrates, observation and taxonomic identification: Porifera, Cnidaria, Plathyhelminthes, Nematoda, Annelida, Mollusca, Arthropoda e Echinodermata.
Phylum Cordata: The Cordata position in the Animal Kingdom. Tegumentar, squeletic, digestive, respiratory, excretory, circulatory, nervous, endocrine and reproductive systems.
Classes Pisces, Amphibia, Reptilia, Mammalia e Aves: origin, evolution and diversity of the different taxonomic groups. Life cycles and environmental exploration. Using species traits and guilds to describe species.

4. Bibliography:

Main Bibliography

Integrated Principles of Zoology - Jr., Cleveland P Hickman , Larry S Roberts, Allan Larson - Boston: McGraw-Hill Higher Education, 2008.
Eckert - Animal Physiology - David Randall, Warren Burggren, Kathleen French, W.H. Freeman (Ed.) and Co., New York :2002.
Animal physiology. Adaption and environment. Schmidt-Nielsen, K. Cambridge University Press. New York. 2002
Pough, F.H., Janis, C.M. & Heiser, J. B. 1999. *Vertebrate Life*. Prentice-Hall. New Jersey. 5th Edition.

Other Bibliography

Scientific papers and other text material given by the lecturer in the classes.

5. Assessment:

A. Frequency
- Short tests conducted in the classes (6 to 8).
- Presentation of a bibliographic work synthesis.
- Global theoretical test.

B. Final examination, optional, compulsory if part A < 12, (60% B + 40% A)

6. Estimated Workload: 224 Hours

7. Last Update: 10/3/2011