Code: 1754 **Animal Resources**
Degree: 1st cycle – Forestry and Natural Resources
Curricular Year: 3rd **Semester Course: 1st**
Credits: 6 ECTS **Compulsory**
Language: Portuguese/English
Responsible: Maria Teresa Marques Ferreira da Cunha Cardoso
Other lecturer(s): Manuela Rodrigues Branco Simões
Web Site: http://www.isa.utl.pt/home/node/3990

1. Contact hours:
Lectures 28 **Lecture/Practicals** 21 **Praticals/Laboratory** 21 **Others** 14 **Total** 84

2. Objectives:

To know and understand the diversity of the main functional groups of invertebrates and vertebrates in forest ecosystems including wetlands such as rivers, streams and lakes.
To understand animal species biotic interactions with plants (e.g. herbivory, pollination) and other animals (e.g. predators, parasites, symbionts).
To understand the effect of environmental and anthropogenic changes of forest ecosystems on animal populations and communities. To know how to sample animal population and communities of different target groups and habitats.

3. Programme:

I - Functional ecology of forest invertebrates:
General aspects of invertebrate communities in forest ecosystems, diversity and ecology.
Biology and ecology of soil invertebrates.
Xylophagous communities and the process of wood decomposition.
Herbivore species and their interaction with host-plants.
Pollinators and coevolution with angiosperms.
Invertebrate predators; predator-prey interactions.
Parasitoidism. Tri-trophic interactions.
Aspects of conservation and management of economically important invertebrates.

II - Functional ecology of forest vertebrates:
Characteristics, structure and diversity of cordates: fish, amphibia, reptiles, birds and mammals. Present life forms. Life cycles on forests and freshwater ecosystems.
Biotic and abiotic interaction. Feeding, habitat and reproductive guilds. Ecology and distribution of Portuguese species. Conservation status and management of populations in wetlands and forest environments.
Sampling methods of animal populations and communities in terrestrial ecosystems and wetlands.

4. Bibliography:

Main Bibliography

Coleman, DC, Crossley Junior, DA 1996. Fundamentals of soil ecology. Academic Press, San Diego, 218 p.
Dajoz R. 1980. Ecologie des insectes forestiers. Gauthier-Villars. Paris
Daly HV, Doyen JT, Purcell AH 1998. Introduction to insect biology and diversity. 2nd edition. Oxford University Press. N. York. 680 p.
Gullan PJ, Cranston PS, 1994. The insects. An outline of entomology. Chapman and Hall. London 505 p.
Pough, FH, Janis, CM & Heiser, JB 1999. *Vertebrate Life*. Prentice-Hall. N. Jersey. 5th Ed.

Other Bibliography

Gillott C. 2005. Entomology. Springer. Dordrecht. 848 p.
Hickman C.P., Roberts L.S., Larson A., I' Anson H., Eisenhour D.J. 2006. Integrated principles of zoology. McGraw-Hill Higher Education. New York. 896 p.

5. Assessment:

Short tests conducted in the practical and laboratorial classes (5 to 7); bibliographic review and synthesis on themes presented and discussed in classes (2); theoretical tests 2.

6. Estimated Workload: 168 Hours

7. Last Update: 13/7/2010