

Code: 1357 Applied Ecology to Nature Conservation**Degree:** 2nd cycle – Agriculture; Environmental Engineering**Stream:** Agriculture - Plant Protection; Environmental Engineering - all**Curricular Year:** 1st**Semester Course:** 2nd**Credits:** 6 ECTS**Optional****Language:** Portuguese/English**Responsible:** José Carlos Augusta da Costa**Other lecture(s):** Maria José Antão Pais de Almeida Cerejeira and Maria Teresa Marques Ferreira da Cunha Cardoso**Web Site:** <http://www.isa.utl.pt/home/node/3799>**1. Contact hours:****Lecture/Practicals 70 Others 14 Total 84****2. Objectives:**

Student skills obtained: to know the Earth biomes. Know the biogeographical map of Portugal and its environmental drivers. Know the Nature 2000 habitats from Portugal, with its species. How to make maps of vegetation. Understand biodiversity at different spatial levels and how these are influenced by human activities. Understand how to use applied ecology in the management and conservation of populations, communities and ecosystems, including in situations of extractable use. Ecotoxicology in risk environmental assessment and management.

3. Programme:

Bioclimatology Earth biomes. Main vegetation divisions and biogeographical types in the Globe. Typology and biogeographical map of Portugal. Description of vegetation, the phytosociological method. Brief characterization of the habitats of Portugal. Potential vegetation in forest cover, pre-forest and pre-desert. Menaces to species conservation, and menace status. Portuguese endangered species, animal and plants. Evaluation of the conservation status of a territory. Habitats Corine. Nature 2000 network. Mapping habitats and species using GIS.

Diversity at the population, community and ecosystem levels. Patches and gradients. Integration of the animal communities into the vegetation patch matrix. Ecological functions and processes. Ecosystems influenced by human activities. Ecosystem health and ecoindicators.

Ecology applied to the management of communities and ecosystems. Levels of acting: protection, management, rehabilitation and recovery. Biotic integrity and the conservation of ecosystem functions. Managing connectivity at the landscape level. Conservation simultaneously with human activities. Carrying capacity and extractable use, examples.

Ecotoxicology in risk environmental assessment and management
Ecotoxicological criteria in environmental pollution risk assessment and management for biodiversity and natural resources protection. Application to study cases in agro-environmental systems and in sensitive zones.

4. Bibliography:**Main Bibliography**

Bailey, RG. (2009) Ecosystem Geography, 2nd Edition. Springer-Verlag. Amsterdam.

Newman, EI (2000) Applied Ecology and Environmental Management. Blackwell Science. London.

Other Bibliography

Lindenmayer, D B. and RJ Hobbs (2007) Managing and Designing Landscapes for Conservation: Moving from Perspectives to Principles. Blackwell Publishing. London.

5. Assessment:

Short tests to observe the improvement of students. Practical work of vegetation mapping. Study visit to "Reserva Natural do Paul de Boquilobo". Final exam.

6. Estimated Workload:

168 Hours

7. Last Update:

19/7/2010