Code: 1614 **Applied Landscape Ecology**
Degree: 2nd cycle – Landscape Architecture
Curricular Year: 1st **Semester Course: 2nd**
Credits: 4 ECTS **Compulsory**
Language: Portuguese/English
Responsible: Francisco Manuel Cardoso de Castro Rego
Other lecturer(s): -
Web Site: http://www.isa.utl.pt/home/node/3756

1. Contact hours:
Lectures 28 **Practicals/Laboratory** 42 **Total** 70

2. Objectives:

The main objective is that students are able to solve as a team work practical questions and issues of the real world using the concepts and tools of Landscape Ecology, with an appreciation of the interest and the advantages of their use.
It is foreseen that the students use know computer tools, as Geographic Information Systems and Pattern Analysis.

3. Programme:

At the beginning of the course possible study cases are presented in order to be the subject of applications of the concepts and tools of Landscape Ecology, and selection of case (or cases) is made according to the interest of the students. In all possible cases some common analyses are done:
1. Patterns of landscape elements (points, lines or patches) and their interpretation;
2. Landscape composition and configuration in relation to its function;
3. Landscape dynamics and related processes.
In each year, the study case selected will vary according to the current interest of the proposed topics and with the availability of the corresponding geographical information.
As an example, the study developed in 2009-2010 focused on a central issue and an important factor of landscape dynamics: fire. According to the different steps of the analysis, some evaluations were done on:
1. Patterns of distribution of the points of ignition sources;
2. Relationships between ingnition points and land use;
3. Analysis of burned patches and their shapes;
4. Relationships between burned areas and land use (selection indices);
5. Landscape dynamics through transition matrices;
6. Conditional transition matrices: the role of fire as a process and factor of landscape dynamics
In all cases Geographical Information Systems are used and all the work done by the students uses GIS and Pattern Analysis, with quantitative analysis performed using Excel and/or statistical packages. This approach allows the students to use these tools in the context of their professional future.

4. Bibliography:

Main Bibliography

Mazzoleni, S., G. di Pasquale, M. Mulligan, P. di Martino, and F.C. Rego. 2004. Recent Dynamics of the Mediterranean Vegetation and Landscape. John Wiley and Sons.
Forman, R.T.T. 1995. Land Mosaics. The ecology of landscapes and regions. Cambridge University Press.

5. Assessment:

The students work in teams, with each team analysing the same questions in different areas or different questions for the same area, presenting their results and discussing collectively to compare their individual results.
The evaluation is based on the work, the presentation and the discussion of the teams. As mentioned in the general regulation for evaluations at ISA the students have the right to ask for a final examination, in which case an individual assignment is given.

6. Estimated Workload:	140	Hours
7. Last Update:	14/7/2010	