Code: 1740 **Animal and Crop Production**
Degree: 1st cycle – Food Science and Engineering; Environmental Engineering
Curricular Year: 2nd **Semester Course: 2nd**
Credits: 6 ECTS **Compulsory**
Language: Portuguese/English
Prerequisites: Botany and Zoology
Responsible: João Carlos da Silva Dias
Other lectures: Fernando Baltazar Santos Ortega, Pedro Jorge Cravo Aguiar Pinto, Carlos Manuel Antunes Lopes, Cristina Maria Moniz Simões Oliveira, João Pedro Bengala Freire and Maria Madalena dos Santos Lordelo
Web Site: http://www.isa.utl.pt/home/node/4034

1. Contact hours:
Lectures 28 **Practicals/Laboratory** 42 **Others** 14 **Total** 84

2. Objectives:

The main objective of the unit is to touch students for:
i) the importance of Agriculture in order to satisfy the basic needs of a growing population;
ii) the many challenges and problems of agriculture today and their implications on agriculture, the economy and food safety;
iii) the diversity of crops and animals, their uses and main production systems;
iv) the factors affecting the vegetal and animal production and their quality; and
v) the methods of optimizing production, quality, efficiency and innovative technology and their interaction.

3. Programme:

I. Introduction:
Agriculture: concepts, origin, domestication and evolution;
Population: evolution, necessities and consumption;
Importance of vegetal and animal production in the world and at Portugal; Those who produce and those who do consumption.
Market prices and their agriculture, economic and food security constraints;
The many challenges and problems of Agriculture today;
Productivity, quality, efficiency and innovative technology;
The environment as source of resources and as limitant of production.
Factors affecting vegetal and animal production;
Agriculture as a system: the agriculture ecosystems, the environment and sustainability;
Decision support in Agriculture;
Main Agricultural systems in the word;
The vegetal and animal production in Portugal: "rural lands" and their main production systems.

II. Vegetal Production: Vineyards, vegetable crops, fruit crops, field, forage and grass crops.
Diversity, their utilizations and nutritional value; Production systems: vegetative and cultural cycles and main practices; Production and quality: main factors.

III. Animal Production: Bovine, ovine, caprine, swine, poultry
Diversity, their utilizations and nutritional value;
Production systems: productive and reproductive cycles and main practices;
Production and quality: main controlling factors.

Two days field trips to "Companhia das Lezírias and Tagus valley farms" and to "Oeste region" to visit crop and animal exploitations.

4. Bibliography:

Main Bibliography

Agustí M 2004. Fruticultura
Almeida D 2006. Manual de Culturas Hortícolas, Vol I e II
Castro R, Cruz A & Botelho M 2006. Tecnologia Vitícola
Coop IE 1992. Sheep and Goat Production
Hunton P (Ed) 1995. Poultry Production: Production System Approach
Villalobos FJ, Mateos L, Orgaz F & Fereres E 2002. Fitotecnia. Bases y tecnologías de la producción agrícola
Webster J 1993. Understanding the dairy cow
Whittemore CT 1993. The science and practice of pig production

Other Bibliography

Costa MS 2003. As bases biológicas das produções animais
Dias JS & Ryder E 2011. World vegetable industry: production, breeding, trends
Dias JS & Ortiz R 2012. Transgenic Vegetable Crops: Progress, Potentials and Prospects
Grigg DB 2002. The Agricultural Systems of the world
Huglin P & Schneider C 2003. Biologie et Ecologie de la vigne
Loomis RS & Connor DJ 1992. Crop ecology: productivity and management in agricultural systems
Srinivasan A (Ed.) 2010. Handbook of precision agriculture

5. Assessment:

The students must attend at least 75% of the lectures.
Continuous assessment consists of 2 frequency tests corresponding to the classes and a practical work about a vegetal or animal product of farm exploitation.
The final grade is a weighted mean of the frequency test grades (70%) and of the practical written work (20%).
Final exam for students that didn't succeed during the semester.

6. Estimated Workload:	168	Hours
7. Last Update:	7/3/2011	