Code: 1382 **Fruticulture**
Degree: 2nd cycle –Agriculture; Food Science and Engineering
Stream: Agriculture – all; Food Science and Engineering – Food Processing
Curricular Year: 1st **Semester Course: 2nd**
Credits: 6 ECTS **Compulsory** (Agriculture – Horticulture)
Language: Portuguese/English **Optional** (all the others)
Responsible: Cristina Maria Moniz Simões Oliveira
Other lecturer(s): -
Web Site: http://www.isa.utl.pt/home/node/3805

1. Contact hours:
Lectures 56 **Practicals/Laboratory** 14 **Others** 14 **Total** 84

2. Objectives:

The goal of the course is to understand the current knowledge of the principles and mechanisms that support fruit production practices and post-harvest technologies, achieved through the following learning outcomes:

- The physiology of perennial fruit trees and the main interactions of the environment with the requirements of the different species

- Recent innovations and technologies uses in the tree fruit industry

3. Programme:

UNIT A - Tree Fruit Production themes

- Ecophysiology and regulation of growth, development and fruit production
- Flowering, pollination, fruit set and fruit growth
- Integrated production techniques of sustainable orchards (irrigation mangement, mineral nutrition and fertilizers, weed control, disease and pest control)
- Nursery production, propagation and rootstocks
- Orchard establishment and renewal (replant diseases)
- Bioregulators in fruit production
- Biotechnology and breeding
- Postharvest biology and technology
- Fruit quality and safety

UNIT B – sites and soils for fruit tree production, constrain factors of productivity, planting systems and postharvest techniques of the following species:

- Pomoideae (apple and pear)
- Prunoideae (plum, cherry, peach and apricot)
- Citrus, Olive
- Temperate nuts (almond, chestnut, walnut and hazelnut)
- Small fruits (raspberry, strawberry
- Kiwi and Fig

4. Bibliography:

Main Bibliography

J Tromp, AD Webster and SJ Wertheim. 2005. *Fundamentals of Temperate Zone Tree Fruit Production*. 2005. Edited Backhuys Publishers, Leiden.

M Faust. 1989. *Physiology of Temperate Zone Fruit Trees* John Wiley & Sons, Inc., NY

Monographers of several Fruit Crops published by CTIFL (Centre Technique Interprofessionnel des Fruits et Légumes)

D Barranco, R. Fernández-escobar and L. Rallo, 1999. *El cultivo del olivo*. MP, Madrid

M Agustí. 2000. *Citricultura*. MP, Madrid

Other Bibliography

DC Ferree & IJ Warrington. 2003. *Apples. Botany, Production and Uses.* CABI, Cambridge, MA
AD Webster & NE Looney. 1996. *Cherries: Crop Physiology, Production and Uses.* CABI, Cambridge, MA
AA Kader. 2001. *Postharvest Technology of Horticultural Crops*. UC, Publication 3311, Oakland
RC Rom & RF Carlson. 1987. *Rootstocks for Fruit Crops* J. Wiley & Sons, NY
AB Peterson & RB Stevens. 1994. *Tree Fruit Nutrition* Good Fruit Grower, WA
U Palara. 2004. *L'impianto del Frutteto*. Edagricola, Bologna.

5. Assessment:

Two essays (40%) and a final exam (60%).
Attendance to practical lectures and field visits is compulsory

6. Estimated Workload: 168 Hours

7. Last Update: 19/7/2010