

**Code: 1763 Horticultural Production Systems – Vegetables, Fruits and Grapes II****Degree:** 1<sup>st</sup> cycle – Agriculture**Curricular Year:** 3<sup>rd</sup>**Semester Course:** 2<sup>nd</sup>**Credits:** 6 ECTS**Compulsory****Language:** Portuguese/English**Responsible:** António José Saraiva de Almeida Monteiro**Other lecturer(s):** Cristina Maria Moniz Simões Oliveira, Carlos Manuel Antunes Lopes, António Maria Marques Mexia and Maria José Antão Pais de Almeida Cerejeira**Web Site:** <http://www.isa.utl.pt/home/node/4026>**1. Contact Hours:**

Lectures 35 Practicals/Laboratory 35 Others 14 Total 84

**2. Objectives:**

To study vineyards, fruit crops and vegetables, integrating basic knowledge with the technological solutions, in a perspective of decision making focused on problem solving. Capacity building to manage major woody and herbaceous crops using knowledge of plant biology, ecology and utilization, plant propagation, and production methods e.g. pruning and training, fertilizing, irrigation, pest management, growth and yield control, harvest, and packing.

**3. Programme:**

1. Crop establishment. Planning and planting an orchard, a vineyard and a vegetable crop
2. Mineral nutrition and fertilization. Designing a fertilization plan for an orchard, a vineyard and a vegetable crop.
3. Irrigation. Designing an irrigation program for a fruit tree crop or a vineyard
4. Crop protection. Planning and executing an IPM programme covering major pests and diseases of fruit crops and vegetables in a perspective of integrated protection.
5. Protected cultivation. Using the most important techniques for protected cultivation. Greenhouse environmental control. Programme vegetable production all year round.
6. Orchard and vineyard management. Growing techniques in a perspective of sustainability and preservation of biodiversity and environment
7. Practice essays: (1) Vineyard annual cycle; (2) Vegetable growing in the field
8. Field visits to nurseries and grape, fruit and vegetable growers

**4. Bibliography:****Main Bibliography**Agustí, M. 2004. *Fruticultura*. Mundi-Prensa Madrid.Hartman, H.; D. Kester; F. Davies Jr., R. Geneve. 2002. Hartmann and Kester's Plant Propagation, Principles and Practives (7<sup>th</sup> Ed.). Prentice Hall.

Almeida, D. 2006. Manual de Culturas Hortícolas, Vol. 1 e 2, Ed. Presença

Castro, R., Cruz, A., Botelho, M. *Tecnologia Vitícola*. MAPF, Portugal**Other Bibliography**

Kader, A.D. Postharvest Biology and Technology: an overview Cap. 4. pp. 39-48. IN: Postharvest Technology of Horticultural Crops Publication 3311 - University of California, Davis

Huglin, P., Schneider, C. (1998). *Biologie et Écologie de la Vigne*. 2e édition, Lavoisier

Maroto, J.V. (2002). Horticultura Herbacea Especial (5ª edição). Mundi-Prensa

**5. Assessment:**

Continuous assessment along the semester based on classroom quizzes, practical essays and visits.

Practice grade is the weighted mean of the various practical essays: viticulture-35%; vegetable crops-40%; and fruit crops and others-25%.

The final grade is the weighted mean of the practice grade and the quiz or written exam grade

**6. Estimated Workload:**

168

Hours

**7. Last Update:**

8/7/2010