Code: 1577 **Tropical and Semi-arid Tropical Viticulture**
Degree: 2nd cycle – Master in Viticulture and Oenology **Curricular Year: 2nd**
Semester Course: 1st
Credits: 3 ECTS **Optional**
Language: Portuguese/English
Lecturer(s): Rogério de Castro (ISA), Olga Laureano (ISA), Jorge Ricardo-da-Silva (ISA), Amândio Cruz (ISA) e Carlos Lucas (Vinibrasil - convidado)
Web Site: http://www.isa.utl.pt/home/node/2593

1. Contact hours:
Lectures 35 **Others** 7 **Total** 42

2. Objectives:

To understand the biological and ecophysiological behaviour of the grapevine in the conditions of tropical semi-arid climate.
To know mechanisms and techniques of the acrotony and dormancy break.
To know well adapted rootstocks and varieties to this terroir.
To adapt the training systems to this climatic condition (temperature, radiation and water).

3. Programme:

I. The vine in tropical semi-arid climate – from perenifollium (natural) to caducifolium (imposition).
From seasonal harvest to continuous harvest.
II. Natural dormancy to imposition dormancy (artificial) – the dormancy and the bud burst.
Dormex and dormancy break.
Acrotony and fertility.
Water managing and pruning opportunity.
III. From the water resources restriction to drainage exigency.
IV. Plant obtaining. Analogies and differences to the classic viticulture – the particular case of the grafting.
The grafting in the nursery vs the grafting at the vineyard.
V. The grapevine and rootstock varieties.
Affinity and functional incompatibility. Idiosyncrasies in the classic viticulture context.
VI. The training and pruning systems.
From pergolas to "espaldeiras"
Vertical shoot positioning vs Downward positioning.
Downward positioning vs R5C.
VII. Influence of the tropical and semi-arid conditions in the composition of the grapes and the wines
Practical:
Bioclimatic indexes calculation for tropical semi-arid climate.
Temperature development stages requirement.
Different vine varieties temperature requirement.
Sensorial characterization of wines from tropical semi-arid climate: blended and varietal wines. Red, white and sparkling wines.

4. Bibliography:

Main Bibliography

CRUZ, A.; CASTRO, R.; SANTOS, J.; GOMES, C. (2007). "Irrigation strategies on three vine varieties in semi-arid tropical climate at northeast of Brazil (Pernambuco). XV èmes Journées GESCO (Grupo de Estudos dos Sistemas de Condução da Vinha), Porec, Croatia, Vol. 1, p. 774-787.
CRUZ, A.; SANTOS, J.; GOMES, C.; CASTRO, R. (2008). Tempranillo in semi-arid tropical climate (Pernambuco – Brazil). Adaptation of some clones and their affinity to different rootstoks. VIIth International Terroir Congress 2008, Nyon, Suisse.
ALBUQUERQUE J. A. S., VIEIRA S. M. (1987). Efeitos da cianamida hidrogenada na brotação da videira cv. Itália na região Semi-árida do Vale do São Francisco. In: *Congresso Brasileiro de Fruticultura*, **9**, 739-744. Campinas-SP. Sociedade Brasileira de Fruticultura (ed). Campinas.

Other Bibliography

Elements de physiologie de la vigne et de viticulture generale – F. Champagnol (351 p.); Sunlight into Wine – Richard Smart and Mike Robinson (88 p.)
BOULTON, R. B. (2001). The co-pigmentation of anthocyanins and its role in the color of red wines. *Am. J. Enol. Vitic*., **52,** 2, 67-87
TONIETTO, J.; GUERRA, C. C.; CAMARGO, U. A. (2004). Desafios e prioridades para o desenvolvimento científico e tecnológico da produção de vinhos de qualidade em zonas tropicais. In: Workshop Internacional de Pesquisa, **1**. Recife e Petrolina. *A produção de vinhos em regiões tropicais*: anais. Bento Gonçalves: Embrapa Uva e Vinho, 2007. p. 191-192. (Embrapa Uva e Vinho. Documentos, 60).

5. Assessment:

Evaluation in final examination. Minimum of 75% of participation in practical courses, with a practical rapport that will present and discussed. Final evaluation result of 2/3 from theory examination and 2/3 from practical rapport.

6. Estimated Workload:	84	Hours
7. Last Update:	30/10/2009	