

**Code: 1674 Grape and Wine-Derived Products and By-Products****Degree:** 2<sup>nd</sup> cycle – Viticulture and Oenology**Curricular Year:** 2<sup>nd</sup>**Credits:** 3 ECTS**Semester Course:** 1<sup>st</sup>  
**Optional****Language:** Portuguese/English**Prerequisites:** Composition and Physico-chemical and Sensory Control of Wines; Vinification**Responsible:** Jorge Manuel Rodrigues Ricardo da Silva**Other lecturer(s):** Isabel Maria Nunes de Sousa, AP Belchior (INRB-EVN), Ilda Caldeira (EVN) and Sara Canas (EVN)**Web Site:** <http://www.isa.utl.pt/home/node/3915>**1. Contact hours:****Lectures 21 Praticals/Laboratory 14 Others 7 Total 42****2. Objectives:**

Knowledge and characterization on the grape and wine alternative products and by-products, in order to obtain a valorisation, in parallel to the main products of the sector: Grapes and wines.

**3. Programme:**

Short historical description of the grape and wine alternative products and by-products. Actual interest. Grape alternative products: juices, production diagram and equipment. Raisins, production diagram and equipment. Polysaccharides gelification: processes and products. Jams, production diagram and equipment, particular case of “uvada”. Jellies, production diagram and equipment, particular case of hypocaloric jellies.

Licors, production diagram and equipment. Concentrated must: economic importance and production, equipment and rectification. Other grape alternative products.

Wine derived products: brandies, types, distillation and alembics, aging technology, the barrels-chemical composition, botanical and geographical origin of the wood, cooperage. Vinegars: types, production technology, fermentation systems, fining. Other wine derived (alternative) products. By-products valorisation: stems, bagasse, seeds, lees, tartar, distillation residues. Biological, nutraceutical, and pharmacological aspects of the vine products: nutraceutical products, main responsible constituents.

**4. Bibliography:****Main Bibliography**

LARANJEIRA, C. (1998) – Introdução monográfica à indústria vinagreira. Aproveitamento de vinhaços de aguardentes vnicas em acetificação: um valor de opção para a indústria vinagreira. Tese de Mestrado em Ciência e Tecnologia de Alimentos, Instituto Superior de Agronomia, UTL.

CALDEIRA, I. (1995) – Uvada – recuperação de um doce tradicional de uva e maçã. Tese de Mestrado em Viticultura e Enologia, Instituto Superior de Agronomia, UTL.

CALDEIRA, I. (2004) – O aroma de aguardentes vnicas envelhecidas em madeira. Tese de Doutoramento em Engenharia Agro-Industrial, Instituto Superior de Agronomia, UTL.

CANAS, S. (2003) – Estudo dos compostos extraíveis de madeira (Carvalho e Castanheiro) e dos processos de extração na perspectiva do envelhecimento em Enologia. Tese de Doutoramento em Engenharia Agro-Industrial, Instituto Superior de Agronomia, UTL.

CANTAGREL, R. (1993) – Elaboration et Connaissance des Spiritueux (1<sup>o</sup> Simpósio Científico International do Congresso), Tec. & Doc. Lavoisier, Paris.

CHATONNET, P. (1995) – Influence des procédés de tonnellerie et des conditions d'élevage sur la composition et la qualité des vins élevés en fûts de chêne. Thèse Doctorat, Université de Bordeaux II

**5. Assessment:**

Evaluation in a final examination

**6. Estimated Workload:**

84 Hours

**7. Last Update:**

8/2/2011