Code: 1572 **Stabilization and Wine Aging**
Degree: 2nd cycle – Viticulture and Oenology
Curricular Year: 2nd **Semester Course: 1st**
Credits: 6 ECTS **Compulsory**
Language: Portuguese/English
Prerequisites: Vinification
Responsible: Olga Maria Carrasqueira Laureano
Other lecture(s): Cristina Clímaco (INRB-EVN)
Web Site: http://www.isa.utl.pt/home/node/3910

1. Contact hours:
Lectures 28 **Praticals/Laboratory** 42 **Total** 84

2. Objectives:

To understand the different phenomena which take place during the storing and stabilization of wines; to develop judgement abilities on wine treatments, according to the type of wine intended.
To promote team work and critical analysis skills.

3. Programme:

1 - Wines, quality and quality control: quality characteristics (legal and commercial specifications); types of Portuguese wines; quality management; critical points of control.
2 - Physiochemical characterisation of wines
3 - Evolution and physiochemical modification of wines: colloidal phenomenon and main mechanisms involved; colouring matter composition and influence of the winemaking technology; evolution of the phenolic compounds during wine ageing (influence of pH, oxygen, dioxide of sulphur and temperature); characteristics and evolution of aroma compounds; wine aging in barrels.
4 – Wines stabilization: metallic, protein and tartaric precipitations; stabilization processes; other treatments; stability tests.
5 - Clarification of wines: fining agents, .fining mechanisms; filtration – mechanisms of filtration; products used in filtration, types of filters.
6 - Other oenological practices: international code of oenological practices.

4. Bibliography:

Main Bibliography

Amerine, M.A. e Joslyn, M.A. (1970) - *Table Wines. The technology of their production*. U Calif Press, Berkeley
Curvelo-Garcia, A.S. (1989) - *Controlo de Qualidade dos Vinhos.*. I V V, Lisboa.
Flanzy,C (1998)-*Oenologie, fondements cientifiques et technologiques.* Tec & Doc, Londres, NY, Paris .
O.I.V. (2006) - *Recueil des méthodes internationales d'analyse des vins et des moûts*. O.I.V., Paris.
O I V (1996) - *Code International des Pratiques enologiques*. O.I.V.,Paris
Ribéreau-Gayon, P.; Glories, Y.; Maujean, A.; Dubourdieu, D. (1998) - *Traité d'Oenologie. 2. Chemie du Vin, Stabilisation et Traitements,* Dunod, Paris.

Other Bibliography

BRAGA, A.; COSME, F :, RICARDO-DA-SILVA , J. M. and LAUREANO, O. (2007) - Gelatine, casein, and potassium caseinate as distinct wine fining agents: *J. Int. Sci. Vigne Vin,* 41 (4):203-214.
COSME, F.; RICARDO-DA-SILVA, J.M.; LAUREANO, O. (2008) – Interactions between protein fining agents and proanthocyanidins in white wine. *Food Chemistry*, 106 (2): 536-544.
Dallas, C. e Laureano, O. (1994) - Effects of pH, sulfur dioxide, alcohol content, temperature and storage time on the colour composition on a young Portuguese red wine. *J.Sci.Food Agric.*, 65: 477-484.
Dallas, C.; Ricardo-da-Silva, J.M. e Laureano, O. (1994) - Degradation of oligomeric procyanidins and anthocyanidins in a Tinta Roriz red wine during maturation. *Vitis*, 34(1): 51-56.
JORDÃO, A.M.; RICARDO-DA-SILVA, J.M.; LAUREANO, O. (2006) – Effect of Oak Constituents and Oxygen on the Evolution of Malvidin-3-Glucoside and (+)-Catechin in Model Wine. *Am. J. Enol. Vitic.* 57(3) : 377-381

5. Assessment:

Assessment based on a written exam and on the discussion of a report concerning the characterization, evolution and treatments of a wine, attributed to the responsibility of a group of three students, in the beginning of the classes' period.

6. Estimated Workload: 168 Hours

7. Last Update: 8/2/2011