Code: 1566 **Composition and Physico-chemical and Sensory Control of Wines**

Degree: 2nd cycle – Viticulture and Oenology
Curricular Year: 1st **Semester Course: 1st**
Credits: 6 ECTS **Compulsory**
Language: Portuguese/English
Responsible: Jorge Manuel Rodrigues Ricardo da Silva
Other lecturer(s): Olga Maria Carrasqueira Laureano, Víctor de Freitas (UP), AS Curvelo- Garcia (INRB-EVN) and Sofia Catarino (INRB-EVN)
Web Site: http://www.isa.utl.pt/home/node/3903

1. Contact hours:
Lecture/Practicals 70 **Others** 14 **Total** 84

2. Objectives:

Knowledge of the physico-chemical and sensory analysis of the wines. Aspects of the quality control in enology. Contact with the sensory analysis: general fundaments and particularities of the sensory analysis of grapes and wines

3. Programme:

1. The chemical composition and quality of the grapes and wines
Organic acids of the wine: fixed and volatile acidity.Mineral substances of the wine: dry extract and ashes. The heavy metals.Volatile compounds of the wine: compounds implicated in varietal aroma of wines. Aroma precursors.Nitrogen compounds of the wines: Non-organic nitrogen. Proteins and amino acids. Glucides of the wines: Main oses and poliosides.Phenolic compounds of grapes and wines:.Physico-chemical aspects of the colour of wines
Quality Control Quality in Enology. Wine analytical methods. Recent methodologies. Automatic analysis (SFA, FIA, Sequential analysis, FTIR). Quality of laboratories. Validation of analytical methods. Harmonization of laboratory practices. Interpretation of analytical results. Collaborative essays. Accreditation of laboratories. Good Practices of Laboratory. Food security in Enology. Some examples. Control of enological products. The International Enological Codex. The International Code of Enological Practices. Quantification of the main wine compounds.

2. Sensory analysis
Sensory metrology: The subjective and the objective. The panel test as an objective method to evaluate the Organoleptic characteristics. Weber´s law and limits of perception.
Physiology of senses. The work conditions of the Panel Test. The panellists: selection methods, panellists training; Basic tastes: Sour, bitter, salty and sweet :Tasting of aqueous and alcoholic solutions. Taste sessions and panel types.
The classification scales –score sheets. Resolution of simple problems; schematic description of main methods.Statistic applied to sensorial analysis. Evaluation forms and data analysis.
Particularity of the wine sensory analysis. The colours of wines. The aspect of wines. The wine aromas. Principal compounds implicated. Wine off-flavours. The aromas related to wood contact. The wine taste. Interactions between phenolic compounds and salivary proteins: astringency mechanisms, compounds implicated in the phenomena of astringency and bitter.
Sensory analysis of white, rose and red wines from different regions and countries. Sensory analysis of special wines. Fortified wines, sparkling, etc

4. Bibliography:

Main Bibliography

Various

5. Assessment:

Final Exam. Presence at least of 75% of the courses.

6. Estimated Workload: 168 Hours

7. Last Update: 15/7/2010