

26233 - Oenology

Información del Plan Docente

Academic Year	2016/17
Academic center	105 - Facultad de Veterinaria
Degree	294 - Degree in Food Science and Technology
ECTS	6.0
Course	4
Period	First semester
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning process that is designed for this subject is based on the following:

The course is divided into 30 hours of lectures, 5 hours of seminars and 20 hours of laboratory practice performed in the pilot plant. In addition, a visit to a winery as 5 hours of special practices will be held. In the seminars, students are divided into groups to discuss the work previously prepared, each group must make a presentation and each member must present. Each student, along the course and in parallel to the development agenda, will prepare a part of the production of pink wines to expose in class. The aim is to increase student participation, help the assimilation of concepts and train students in preparation and public exposure of a subject.

26233 - Oenology

Out of the 20 hours of laboratory 12 will be of oenological chemical analysis, organized in sessions of 3 hours and 8 sessions of 2 hours of sensory analysis (introduction to wine tasting). Complementing the laboratory activity and with the objective of further approximation to the industrial reality of the wine sector, students will make a study visit to a winery, following the same will write a report to evaluate the acquired knowledge.

In the 50 minutes of the lectures the teacher will present the most important aspects of the subject matter and will rise up questions to the students concerning this matter.

5.2.Learning activities

The program that is offered to the student to achieve the expected results includes the following activities

Block 1. Composition of grapes and wine. Fermentations.

Learning activities. (3.3 ECTS). Master-classes: 20 hours of lectures

- Laboratory practices: 8 hours. Introduction to sensory analysis. Methodology tasting white, red and special wines in two hours sessions.

Practices: 5 hours of technical visit to a wine cellar. A report of the visit will be made indicating: location of the winery, types of wine produced, machinery, particularities of the winery, etc..

Study by the student. 45 hours of autonomous work, theory and resolution of issues raised in each of the topics

Block 2. Enotecnia

Learning activities. (2.7 ECTS). Master-classes: 10 hours of lectures

Laboratory practices: 12 hours chemical oenological analysis practices.

Practice 1. Determination of pH, total acidity and volatile acidity (3 hours)

Practice 2. Determination of the density of must, alcohol degree and free and total sulfur grade. (3 hours)

Practice 3. Easily assimilable nitrogen, sugars reductors, iron determination. (3 hours)

Practice 4. Color indexes, total anthocyanins, total tannins. (3 hours)

Practical evaluable work. Report of each practices pairwise. Analysis of the results of the main oenological parameters

Seminar. 5 hours. Resolution of cases in small groups

Study by the student. 35 hours of autonomous work: theory, problem solving and literature search of the issues raised

26233 - Oenology

5.3.Program

Block 1

1. Introduction to oenology. History of oenology. Social and economical importance of the wine industry. Bibliography.
2. The grape. Origin and evolution of the vine. Driving systems vineyard. Varieties of wine *vitis vinifera* .
3. Chemical composition of grape berry. Evolution of chemical composition during ripening. Maturity indices. The grape, pillar of wine quality.
4. Components of wine. Alcohols. Acids. Carbohydrates. Nitrogenous components. Polyphenolic composition of the wines. Color formation and evolution of wine during vinification Compounds responsible for the aroma of the wine.
5. The SO₂ in oenology. Sulphitation of the must. Chemistry of sulfur in wine: balance, reactions.
6. Alcoholic fermentation and yeast. Development of alcoholic fermentation. Useful yeast species. Species of harmful yeasts. Factors influencing the development of alcoholic fermentation.
- 7: The malolactic fermentation and lactic acid bacteria.

Block 2

8. The vintage. Factors that may affect the quality of the vintage.
9. General scheme of the production of red wines.
10. General scheme of the production of white wines.
11. Factors affecting the maturation and aging of wines. Sensory changes during maturation and aging. Development of the oak barrels.
- 12: Notions of clarity, clarification and stabilization.

5.4.Planning and scheduling

Schedule sessions and presentation of works

The dates and key milestones of the subject are described in detail, along with the other subjects in the fourth grade in the Grade of CTA, on the website of the Faculty of Veterinary Medicine (link: <http://veterinaria.unizar.es/gradocta>). This link will be updated at the beginning of each academic year.

The winery tour depend on the development of the campaign. Normally it is held after Pilar festivities

26233 - Oenology

5.5. Bibliography and recommended resources

Typically, the literature of the academic year is kept updated and is consulted by the Library website (search recommended bibliography in biblioteca.unizar.es)

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=26233&Identificador=12152>