

30833 - Oenology

Syllabus Information

Academic Year: 2022/23

Subject: 30833 - Oenology

Faculty / School: 105 - Facultad de Veterinaria

Degree: 568 - Degree in Food Science and Technology

ECTS: 6.0

Year: 4

Semester: First semester

Subject Type: Compulsory

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student must show that he has attained the expected learning outcomes through the following assessment activities

Written exam. This part will evaluate the acquisition of theoretical knowledge and its integration within the context of the winery. Therefore, the questions will be theory applied, trying to simulate real situations. It will be done at the end of the semester. The grade will represent 65% of the student's overall grade of the subject.

Evaluation of practices. The competencies, skills and abilities acquired in laboratory practices will be assessed through the numerical results obtained at the end of the same and with the previous questions and final test of the practices, delivered to the teacher individually. Representing the 20% of the final grade.

Evaluation of the individualized work. The attendance, participation, preparation and oral presentation of the academic activities supervised in the seminars will be evaluated. It will represent up to 10% of the final grade.

Visits to companies in the sector. The report done by the student will be evaluated. It will represent 5% of the final grade.

The written exam and final test of practices will take place on the dates established in the calendar of examinations prepared by the center. The previous questions and numerical results obtained in the practices will be delivered during the academic period. Seminars will be done in the scheduled seminars and winery report will be done after visiting the warehouse. These activities will allow the student to eliminate the subject matter of the evaluation.

Valuation criteria and levels of exigency

Written exam (test 1): the qualification will be grade from 0 to 10 and it will be necessary to obtain a minimum grade of 4 out of 10 to pass. The relevance of the content and the synthesis capacity will be especially valued.

Laboratory practices (test 2): In the evaluation of the practices, the expression of the results in the appropriate units and the answers to the questions raised before and after the practices will be assessed.

Evaluation of the tutored work (test 3): it will be necessary to present with clarity and precision the work done, and answer the questions that arise about it. The synthesis capacity and relevance of the contents will be evaluated. 5 minutes of presentation and 5 minutes of defense are foreseen for this valuation.

Visits to companies in the sector (test 4): the ability to observe, synthesize and clarify in the visit report will be assessed.

The overall grade will be obtained from the weighted average of the four tests presented: test 1 (65%), test 2 (20%), test 3 (10%) and test 4 (5%).

For the overall grade of the subject, the results obtained in the tests passed will be maintained until the end of the next academic year.

Grading system: in accordance with the Regulations for the Evaluation of Learning Standards of the University of Zaragoza (Governing Council Agreement of 22 December 2010), the results obtained by the student will be graded according to the following numerical scale from 0 to 10, with an expression of one decimal point. Their corresponding qualitative qualification

may be added according to:

0-4.9: Suspended (SS).

5.0-6.9: Approved (AP).

7.0-8.9: Remarkable.

9.0-10: Outstanding (SB).

The mention of "Honors Matrícula" can be granted to students who have obtained a grade of 9.0 or higher. It may not exceed five percent of the students enrolled in the corresponding academic year.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. 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 special practices 5 hours will be held. In the seminars students divided into groups discuss the preparation work, making a presentation each of the groups participating in the exhibition and all people the same. Each student along the course and in parallel to the development agenda, prepare a part of the production of pink wines to expose in class, with the aim of increasing student participation, help the assimilation of concepts and train students in preparation and public exposure of a subject. Of the 20 total hours of laboratory 12 will be of oenological chemical analysis sessions organized in 3 hours and 8 sensory analysis (introduction to wine tasting) organized sessions of 2 hours. Complementing the laboratory activity and with the objective of further approximation to the industrial reality of the wine sector, students made a study visit to a winery, following the same will write a report to evaluate the acquired knowledge. In the 50 minutes of the master class the teacher will present the most important aspects of the subject matter and students pose questions concerning this matter. Students must follow the regulations described in:

- Prevention: A guide for students at the University of Zaragoza: https://uprl.unizar.es/sites/uprl.unizar.es/files/archivos/Procedimientos/guia_preventiva_para_estudiantes.pdf
- Manual de seguridad en los laboratorios de la Universidad de Zaragoza y normas marcadas por la Unidad de Prevención de Riesgos Laborales:

https://uprl.unizar.es/sites/uprl.unizar.es/files/archivos/Procedimientos/manual_de_seguridad_en_los_laboratorios_de_la

<https://uprl.unizar.es/inicio/manual-de-procedimientos>

In addition, students will follow as well any instructions related to biosecurity given by the professor

4.2. Learning tasks

The course includes the following learning tasks:

- **Section 1. (3.3 ECTS)**
 - Lectures: 20 hours of lectures.
 - Laboratory practices: 8 hours. Introduction to sensory analysis. Methodology tasting white, red and special sessions of two hours wines.
 - Special -Practices: 5 hours of technical visit to a winery. 1 cellar will visit the area. location of the winery, types of wine produced, machinery, particularities of the winery, etc.: a report of the visit will be made indicating.
 - Study by the student. 45 hours of autonomous work, theory and resolution of issues raised in each of the topics
- **Section 2. (2.7 ECTS)**
 - Lectures: 10 hours of lectures.
 - Laboratory practices: 12 hours Chemical analysis oenological practices.

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

Practice 2. Determination of the density of wine, alcohol content and free and total SO₂ content (3 hours).

Practice 3. Assimilable nitrogen, reducing sugars, iron determination (3 hours).

Practice 4. Indexes color, IPT, total anthocyanins, total tannins (3 hours).

Work practical evaluable. Initial questions. Analysis of the results of the main oenological parameters. Final test

- Seminar. 5 hours. Joint resolution of cases distributed in small groups. Study by the student. 35 hours of autonomous work: theory, solving work issues and literature search of the issues raised.
- Study by the student. 35 hours of autonomous work, theory and resolution of issues raised in each of the topics.

4.3. Syllabus

The course will address the following topics:

- Topic 1. Introduction to oenology. History of oenology. Social and economical importance of the wine industry.
- Topic 2. The grape. Origin and evolution of the vine. Driving systems vineyard. Varieties of wine *vitis vinifera*.
- Topic 3. Chemical composition of grape berry. Evolution of chemical composition during ripening. Maturity indices. The grape, pillar of wine quality.
- Topic 4. Components of wine. Alcohols. Acids. Carbohydrates. Nitrogen components. Polyphenolic composition of the wines. Color formation and evolution of wine during vinification Compounds responsible for the aroma of the wine.
- Topic 5. The SO₂ in oenology. Sulphitation of the must. Chemistry of sulfur in wine: balance, reactions.
- Topic 6. Alcoholic fermentation and yeast. Development of alcoholic fermentation. Useful yeast species. Species of harmful yeasts. Factors influencing the development of alcoholic fermentation.
- Topic 7: The malolactic fermentation and lactic acid bacteria.
- Topic 8. The vintage. Factors that may affect the quality of the vintage.
- Topic 9. General scheme of the production of red wines.
- Topic 10. General scheme of the production of white wines.
- Topic 11. Factors affecting the maturation and aging of wines. Sensory changes during maturation and aging. Development of the oak barrels.
- Topic 12: Notions of clarity, clarification and stabilization.
- Topic 13: Bottling

4.4. Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the Facultad de Veterinaria web <https://veterinaria.unizar.es/academico/plan-estudios-grado-cta>

4.5. Bibliography and recommended resources

BB Aleixandre Benavent, José Luis. Manual de vinos y bebidas / José Luis Aleixandre Benavent , José Luis Aleixandre Tudó . Valencia : Universidad Politécnica de Valencia, D. L. 2010

BB Amerine, Maynard A.. Análisis de vinos y mostos / M.A. Amerine y C.S. Ough ; traducción de J. Ma. Gavilán y C. Romero y J.L. Suso . Zaragoza : Acribia, D.L. 1976

BB Enología : fundamentos científicos y tecnológicos / coordinador, Claude Flanzy ; traducido al español por Antonio López Gómez, José Macho Quevedo, Antonio Madrid Vicente ; con la colaboración de, Ana Madrid Cenzano . 2ª ed. Madrid : AMV Ediciones : Mundi Prensa, 2003

BB Hidalgo Togores, José : Tratado de enología / José Hidalgo Togores . - 2ª ed. rev. y amp. Madrid : Mundi-Prensa, 2011

BB Hidalgo Togores, José. Tratado de enología. Tomo I / José Hidalgo Togores [Libro electrónico]. - 2a. edición revisada y ampliada. Madrid : Mundi-Prensa, 2011

BB Hidalgo Togores, José.. Tratado de enología. Tomo II / José Hidalgo Togores. [Libro electrónico]. - 2a. edición revisada y ampliada. Madrid : Mundi-Prensa, 2011

BB La Higiene en enología : de la vendimia al embotellado : guía práctica / textos e ilustraciones realizados por los ingenieros y enólogos del Institut Technique de la Vigne et du Vin, París, H. Biol ... [et al.] ; versión española, Eduard Puig Vayreda ; revisión de textos, Joaquim Griell Ventosa ; asesoramiento, Josep Sancho Valls . Barcelona : Dionysos, D. L. 1992

BB Rankine, Bryce. Manual práctico de enología / Bryce Rankine ; prefacio de Maynard A. Amerine ; [traducido por Ana Casp Vanaclocha, Mª Jesús Cantalejo Díez, Belén Ayestarán Iturbe] . Zaragoza : Acribia, 1999

BB Suárez Lepe, José Antonio. Microbiología enológica : fundamentos de vinificación / José Antonio Suárez Lepe, Baldomero Iñigo Leal . 3ª ed. Madrid : Mundi-Prensa, 2004

BB Tratado de enología. 1, Microbiología del vino vinificaciones / Pascal Ribéreau-Gayon ... [et al.] . 1a. ed. en español Buenos Aires : Hemisferio Sur : Mundi-Prensa, 2003

BB Tratado de enología. 2, Química del vino estabilización y tratamientos/ Pascal Ribéreau-Gayon ... [et al.] . 1a. ed. en español Buenos Aires : Hemisferio Sur : Mundi-Prensa, 2003

BB Zamora Marín, Fernando. Elaboración y crianza del vino tinto : aspectos científicos y prácticos / Fernando Zamora Marín . 1a. ed. Madrid : AMV Ediciones : Mundi-Prensa, 2003