



OENOLOGY & BEVERAGE TECHNOLOGY

ΓΕΝΙΚΑ

SCHOOL		AGRICULTURAL SCIENCES	
DEPARTMENT		FOOD SCIENCE & NUTRITION	
PROGRAMME		UNDERGRADUATE	
COURSE CODE		ME712	SEMESTER G
COURSE		OENOLOGY & BEVERAGE TECHNOLOGY RESPONSIBLE: D. MAKRIS	
TEACHING ACTIVITIES		TEACHING HOURS PER WEEK	CREDIT UNITS
LECTURES		3	6
LABORATORY		3	
COURSE TYPE		SCIENTIFIC AREA/SPECIFIC BACKGROUND/ SKILL DEVELOPMENT	
PREREQUISITES:		NO	
TEACHING AND EXAM LANGUAGE:		GREEK	
COURSE OFFERED TO ERASMUS STUDENTS		NO	
COURSE SITE (URL)			

LEARNING OUTCOME

Learning outcome

The objective of the course is the understanding of concepts pertaining to raw material (grape) for wine production, the composition of grapes, musts, and wines, the wine and distillate production process, and the quality control of wines and distillates. Laboratory exercises intent to accustom students with official analyses of musts and wines, which are related with wine and distillate production and quality control.

All the above are studied in depth with the necessary degree of specialization, and with the use of many case studies and practical applications, so that a student can resolve complex problems which may arise in industrial production of wines and distillates, and develop research and innovation (research and development of new products) in combination with knowledge from other courses (Microbiology, Chemistry, Biochemistry, Food Biotechnology), in order to allow the production of new knowledge and the evolvement of vinification and distilling processes.

Upon successful completion of the course, students will be able to:

- Have profound knowledge related with wine and distillate raw materials
- Have deep knowledge on must and wine composition.
- Have advanced knowledge on microbiology and biochemical transformations related with wine and distillate production.
- Have specific knowledge on the overall wine and distillate production process.
- Have advanced knowledge on the application of analytical methods for wine and distillate quality control.

General skills



Upon completion of the course, the students will acquire the following skills:

- Critical thinking and the link between theory and practical applications
- Search, analysis and combination of data and information with the use of cutting-edge technologies
- Decision making
- Self-sufficient working
- Team working
- Advancement of free, creative and inferential thinking
- Development of connotative and divergent thinking
- Critical awareness of issues pertaining to the specific field and the link to industrial practice

Syllabus

1st week: Grape ripening – Technological maturity
 2nd week: Composition and chemistry of musts and wines I
 3rd week: Composition and chemistry of musts and wines II
 4th week: Must production and composition – Prefermentative processes
 5th week: Microorganisms and fermentation biochemistry I
 6th week: Microorganisms and fermentation biochemistry II
 7th week: Post-fermentation treatments and ageing
 8th week: Crystallization – colloids - Stabilisation
 9th week: Overview of white vinification
 10th week: Overview of red vinification
 11th week: Distillation & distillate production I
 12th week: Distillation & distillate production II
 13th week: Overview - summary

Laboratory course: 1. Introduction 2. Determination of must density – Baume grades – Potential alcoholic strength 3. pH measurement – Determination of titratable acidity 4. Determination of reducing sugars 5. Determination of alcoholic strength 6. Determination of free and bound sulfur dioxide. 7. Determination of Folin-Ciocalteu index (total polyphenols). 8. Overview - summary

TEACHING AND LEARNING METHODS - EVALUATION

TEACHING MODE	On campus. In laboratory courses, following a short demonstration by the teaching staff, students carry out the experiment. Furthermore, students get accustomed to writing of scientific reports, in which the experimental data are appropriately given and discussed.		
USE OF COMPUTER SERVICES	Lectures are delivered by power point presentations and other audio media		
TEACHING ORGANISATION	Activity	Semester workload	
	Lecture course	39	
	Laboratory course	39	
	Study	72	
	Sum	150	
STUDENT EVALUATION	The language of evaluation is Greek. The final grade is 50% the grade of the lecture course and 50% of the laboratory course. The exams of the lecture course include multiple choice questions. The exams of the laboratory course include exercises (50%) and reports (50%).		

RECOMMENDED BIBLIOGRAPHY

Boulton B.R., Singleton V.L., Bisson F.L., Kunkee E.R., 2018. Enology – Basic principles and vinification methods. ISBN: 9789925563210, BROKEN HILL PUBLISHERS LTD