

DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	Chemistry				
Head of course	PhD Siniša Petrović, College Professor				
Study programme	Professional undergraduate study Winemaking				
Status of a course	Obligatory				
Year of study	1.	Semester	I	ECTS credits	4
Teaching plan (L + E + S+ Pr)	L+E				
Goals of a course					
Introduce students to the structure, properties and chemical changes of substances and the basics of chemical calculus. Specify in particular the compounds and reactions used in viticulture and winemaking. Exercises allow developing the ability to solve tasks, experiment, record results, and draw conclusions from performed measurements.					
Conditions for enrolling course					
No conditions					
Learning outcomes on a level of a study programme which includes course					
Outcome 6: Analyse the basic chemical composition of grape must and make corrections of crushed grapes, grape must and wine. Outcome 7: Recommend and implement methods of eliminating disease and wine defects. Outcome 8: Apply the appropriate vinification technology for white, rose and red wine with monitoring and determining technological processes, and carries out physic-chemical and biological stabilization of wine. Outcome 9: Finalize the wine by selecting the appropriate equipment and packaging and bottling the wine. Outcome 10: Apply basic technologies in the production of sparkling wine, liqueur wine and dessert wine by selecting the appropriate equipment and packaging for the production, processing and finalization of these wines.					
Expected learning outcomes on a level of a course					
1. Adopt basic chemical terms and solve computational problems. 2. Distinguish types of solutions and carry out measurements in a chemical laboratory. 3. Use methods to analyse the composition of solutions. 4. Describe the properties of chemical reactions and their significance in the processing of agricultural products. 5. Describe the properties and state the use of the elements and their inorganic compounds based on their chemical properties. 6. Distinguish organic compounds by their constitution and properties. 7. Evaluate the properties and use of selected organic compounds.					
Content of a course					
Introduction to chemistry: matter and its chemical transitions. Structure of an atom and periodical system of elements. Chemical laws of bonding related to mass and volume. Characteristics of solid matter, liquid and gaseous substances. The relative atomic and molecular mass and definition of mol as a measure of matter quantity. The chemical bond and structure of molecules. Types of solutions and quantitative definitions of their content. Colloids, electrolytes, acids and bases. pH of solution and buffers. Methods of purification and chemical analysis used in vine and olive oil production technology. Types of chemical reactions. Redox-reactions and redox potential of vine. The harmony, velocity and energetics of chemical reactions. Chemical composition of earth and biogenic elements. Properties of important elements and compounds used in viticulture and vine and olive oil production. Types and properties of hydrocarbons. Organic compounds with different functional groups: composition and properties. Common organic compounds found in the goring of the main Mediterranean plants and agricultural products.					
Teaching modes	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network		

	<input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes	<input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____
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Comments	
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Students' obligations

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Grading, evaluation and monitoring of students' work continuously during lectures and exams
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Grading is based upon evaluation of course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of students.

Continuous check-up:

Outcomes	Pre-exam I (%)	Pre-exam 2 (%)	Laboratory exercises (%)	Home assignment (%)	Threshold (%)	Max (%)
Outcome 1	16			4	10	20
Outcome 2	16		6	2	12	24
Outcome 3	8		6	2	8	16
Outcome 4		10			5	10
Outcome 5		8			4	8
Outcome 6		12			6	12
Outcome 7		10			5	10
Percentage of ECTS	1.6	1.6	0.48	0.32		
Total	40%	40%	12%	8%	50 %	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

Exam term:

Outcomes	Written exam (%)	Oral exam (%)	Max
Outcome 1	16	4	20
Outcome 2	20	4	24
Outcome 3	14	2	16
Outcome 4	8	2	10
Outcome 5	6	2	8
Outcome 6	8	4	12
Outcome 7	8	2	10
Percentage of ECTS	3.2	0.8	
Total	80	20	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

Grading:

A student has passed the exam if he has acquired at least 50% of anticipated credits of a specific learning outcome.

If a student has passed learning outcomes of all courses, the accomplished credits (percentages) of all passed learning outcomes are being added, while the final grade is defined upon following table:

Range of credits (percentages)	Numerical grade	ECTS grade
90,00 – 100,00	Excellent (5)	A

	75,00 – 89,99	Very good(4)	B	
	60,00 – 74,99	Good(3)	C	
	50,00 – 59,99	Sufficient (2)	D	
	0,00 – 49,99	Insufficient (1)	F	
Obligatory literature				
1. Filipović, I., Lipanović, S. Opća i anorganska kemija I i II. Školska knjiga, Zagreb. 2. Biffi: Osnove kemije za studente šumarskog fakultet. Školska knjiga, Zagreb. 3. Sikirica, M. Stehiometrija. Školska knjiga, Zagreb 4. Amić, D. Organska kemija za studente agronomске struke. Školska knjiga, Zagreb.				
Additional literature				

