

DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	Machines in agriculture				
Head of course	PhD Mario Staver, College Professor				
Study programme	Professional undergraduate study Mediterranean Agriculture				
Status of a course	Obligatory				
Year of study	1	Semester	II	ECTS credits	5
Teaching plan (L + E + S+ Pr)					
Goals of a course					
By completing the course students are able to use machines and devices in viticulture, fruit growing, vegetable growing, crop production, winemaking and olive processing. They can distinguish between correct and faulty modes, and can make basic adjustments to improve the quality of the machine, soil, plant, fittings, final product in the winery and oil mill. They are directed towards rationalization and efficiency of agro-technical measures as well as the use of equipment for processing grapes and olives in order to achieve the expected quality of products.					
Conditions for enrolling course					
No conditions					
Learning outcomes on a level of a study programme which includes course					
Outcome 1: Assess the quality of planting material and produce planting material by the appropriate propagation method.					
Outcome 2: Recommend the production technology for vegetables and medicinal plants outdoors and in protected areas according to the requirements of a certain species, and evaluate the quality of vegetables and aromatic herbs on the basis of internal and external quality.					
Outcome 3: Prepare a plan for the cultivation of Mediterranean crops, including economic and cultivation elements.					
Outcome 6: Determine economically significant pests and implement preventative and curative methods of plant protection with respect to the production system.					
Outcome 8: Conduct correction of crushed grapes, grape must and wine on the basis of chemical composition and apply new technologies in wine production, care, stabilization and finalization.					
Outcome 10: Interpret virgin olive oil production technology.					
Expected learning outcomes on a level of a course					
1. Describe tractor parts and recommend the appropriate tractor model for agricultural production					
2. Describe and recommend machines for landscaping, fertilization, preparation for sowing and planting					
3. Interpret methods for pesticide application in agricultural production					
4. Describe the machinery in viticulture and winemaking					
5. Describe and select equipment for production, harvesting and processing of the most important Mediterranean crops					
Content of a course					
Specific agricultural conditions in EU-Mediterranean and sub-Mediterranean regions, groups of Mediterranean crops and growing technologies. Agro-family farms, estate size and selection of machines and devices to be used in agriculture. Internal-combustion engines: types, operation principle and main parts. Main parts of tractor. Models of tractors in agricultural production. Machines and devices used for terrain systematisation and planting. Machines and devices used for basic, integral and additional tillage. Machines and devices for organic fertilization, basic and additional mineral fertilization. Methods, machines and devices for pesticide application. Equipment and machines in plant housing. Methods and systems of irrigation. Methods, machines and equipment for protection from low temperatures and late spring frosts. Machines and equipment for mechanised picking. Machines and tools in vine growing and wine producing. Machines and equipment in olive production. Machines and devices used with other Mediterranean fruit varieties. Machines and equipment in production of other fruit varieties. Machines and devices in vegetable production. Machines and devices in production of some					

sorts of aromatic plants in Mediterranean region.					
Teaching modes	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____		
	Comments				
Students' obligations					
Grading, evaluation and monitoring of students' work continuously during lectures and exams					
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	Practical implementation	Seminar work	Threshold	Max
Outcome 1	20	10	/	15	30
Outcome 2	10	10	/	10	20
Outcome 3	10	/	10	10	20
Outcome 4	10	10	/	10	20
Outcome 5	10	/		5	10
Percentage of ECTS	3,0	1,5	0,5	-	-
Total	60 %	30 %	10 %	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	Threshold	Max	
Outcome 1	20	10	10	30	
Outcome 2	20		10	20	
Outcome 3	10	10	10	20	
Outcome 4	10	10	10	20	
Outcome 5	10		10	10	
Percentage of ECTS	3,5	1,5	-	-	
Total	70 %	30 %	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.					
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				
<ol style="list-style-type: none"> 1. Interna skripta sačinjena od Prof.dr. Tomislav Jurić 2. Prof.dr. Josip Brčić: Mehanizacija u voćarstvu 3. Dr.sc. Mario Staver, Sanja Radeka, Vinarstvo 1, Vinarstvo 2. 				
Additional literature				
<ol style="list-style-type: none"> 1. Petar Lukač, Đuro Banaj, Dario Knežević, Domagoj Zimmer, Strojevi za sistematizaciju zemljišta, obradu i gnojidbu tla 2. Đuro Banaj, Vjekoslav Tadić, Željka Banaj, Petar Lukač, Unaprjeđenje tehnike aplikacije pesticida 3. D.Brkić, T.Jurić, M.Vujčić, L.Šumanovac, P.Lukač, D.Kiš, D.Knežević, Eksploatacija poljoprivrednih strojeva 4. Bojan Kraut, Strojarski priručnik 5. Osnove strojarstva, skripta, sveučilište u Osijeku 6. V. Radovanović, Tehnologija vina (Srbija) 7. Prof. dr. Josip Barčić, Priručnik za rad prskalice i orošivači 8. Kuzman Ražnjević, Jedinice Međunarodnog sustava SI 				

