Add. 3	**Course program for the first, second and third level (cycle) of studies**

1.	Course title	Applied Optimization				
2.	Code	259				
3.	Study group(s)	Mechatronics				
4.	The organizer of the study program (unit, institute, department)	Institute of Mechatronics; Department of Mathematics and Informatics				
5.	Level (first, second, third)	First				
6.	Academic year / semester	Third / winter	7.	ECTS credits	6	
8.	Instructor	Aleksa Malcheski, Roza Aceska				
9.	Prerequisites	none				
10.	Course objectives (competences): Introduction to the basics of various optimization methods. Competence for their application in modeling and solving engineering problems with the use of computer software.					
11.	Course content: Formulating optimization problems and mathematical modeling. Optimization with and without constraints. Examples from engineering. Use of computer software for optimization.					
12.	Study methods: interactive lectures, auditory practice, homework,self-learning					
13.	Total hours	6 ECTS x 30 hours = 180 hours				
14.	Hours allocation per activity:	30+30+40+0+80 = 180 hours				
15.	Lectures/Lab	15.1.	Lectures	30 hours		
		15.2.	Student work	30 hours		
16.	Project Work/Assignments	16.1.	Project assignments	40 hours		
		16.2.	Individual assignments	0 hours		
		16.3.	Self-learning	80 hours		
17.	Points/Marks:					
	17.1.	Tests	50 points			
	17.2.	Projects	40 points			
	17.3.	Attendance	10 points			
18.	Grading scale	Under 50	5 (five) (F)			
		51 - 60 points	6 (six) (E)			
		61 - 70 points	7 (seven) (D)			
		71 - 80 points	8 (eight) (C)			
		81 - 90 points	9 (nine) (B)			
		91 - 100 points	10 (ten) (A)			
19.	Prerequisites for taking the final exam	activity 17.3				
20.	Language of Instruction	Macedonian				
21.	Course evaluation	Student questionnaire				

22.	Textbooks				
	Instruction materials				
	No.	Author	Title	Publisher	Year
22.1.	1.	P. Venkataraman	Applied Optimization with Matlab Programming	John Wiley &S Sons, NY	2002
	2.	B.D. Bandi	Basic Optimization Methods	Edvard Arnold Publ., London	2006
	3.	R. Fletcher	Practical Methods of	John Wiley & Sons	2000

				Optimization		
	22.2.	Supplemental Instruction Materials				
		No.	Author	Title	Publisher	Year
		1.	J. Petrić, S. Zlobec	Nonlinear Programming	Научна мисла, Београд	1983
		2				