

Add. 3		Course program for the first, second and third level (cycle) of studies			
1.	Course title	Rapid prototyping technology, models and tools			
2.	Code	315			
3.	Study group(s)	P.Inf, PE, TML, TI, HIMV, MSKI, IIM, MV, EE, MHT, AUS, IND, DK			
4.	The organizer of the study program (unit, institute, department)	Faculty of Mechanical Engineering - Skopje, Ss. Cyril and Methodius University in Skopje			
5.	Level (first, second, third)	First			
6.	Academic year / semester	summer	7.	ECTS credits	6
8.	Instructor	Prof D-r Atanas Kochov			
9.	Prerequisites	N/A			
10.	Course objectives (competences): Introduction to the methodology of modern and fast product development through technologies of rapid prototyping and rapid tool, competitive engineering, models and tools for rapid prototyping, economic and environmental aspects, the application of rapid prototyping technologies in mechanical engineering and other technological areas.				
11.	Course content: Basics, Definitions and Application levels, Overview of new trends in product development reverse engineering, rapid prototyping technologies, rapid manufacturing, rapid tooling, stereo lithography, laser sintering, 3D printing, 3D scanning, making tools for rapid prototyping, software technologies for rapid prototyping.				
12.	Study methods: Interactive lectures, exercises auditory and / or laboratory, individual and / or team working on project assignments, self-study.				
13.	Total hours	6 ECTS x 30 hours = 180 hours			
14.	Hours allocation per activity:	30 + 30 + 30 + 30 + 60 = 180 hours			
15.	Lectures/Lab	15.1.	Lectures	30 hours	
		15.2.	Lab (student work)	30 hours	
16.	Project Work/Assignments	16.1.	Project assignments	30 hours	
		16.2.	Individual assignments	30 hours	
		16.3.	Self-study	60 hours	
17.	Points/Marks:				
	17.1.	Tests	70 points		
	17.2.	Projects	20 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	Realized activity 17.2			
20.	Language of Instruction	Macedonian			
21.	Course evaluation	Student questionnaire			
22.	Textbooks				
	22.1.	Instruction materials			
No.		Author	Title	Publisher	Year

		1.	A. Kochov	Rapid prototyping technology, models and tools	Intern Script Faculty of Mechanical Engineering - Skopje	2009
		2.	M. Planchak	Rapid prototyping technology, models and tools	University of Novi Sad, Faculty of Technical Science	2009
		3.				
	22.2.	Supplemental Instruction Materials				
		No.	Author	Title	Publisher	Year
		1.	Andreas Gebhard	Rapid prototyping: principles and applications	Hanser Publisher, Munich	2003
		2.	Frank W. Liou	Rapid prototyping and engineering applications: a toolbox for prototype development		2007