

Add. 3		Course program for the first, second and third level (cycle) of studies				
1.	Course title	Modeling tools for plastic				
2.	Code	215				
3.	Study group(s)	PI				
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): Introducing the characteristics of plastic tools, features process, injection molding processes technology, computer techniques for automatic generation of tools for injection molding processes for plastic.					
11.	Course content: Plastic technologies, tools and tool types, tool classification, databases, standard elements, ejection systems, heaters tools for injection molding processes molding, machines for injection molding, automatic generation of tools for plastic, calculations and numerical analysis for tools for plastic, optimization of the plastic tools, technical and economic analysis, computer-aided design tools.					
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	Modeling tools for plastic	Intern script, Faculty of Mechanical Engineering - Skopje	2008
		2.	David Kazmer	Injection mold design engineering	Hanser, Munich	2008
		3.				
		Supplemental Instruction Materials				
	22.2.	No.	Author	Title	Publisher	Year
		1.	T.Osswald, L.S. Turng, P.Gramman	Injection Molding Handbook	Hansen Publisher	2007
		2.	I.Catic, F.Johannaber	Injection molding of polymers	Polimerstvo, Zagreb	2004