

Add. 3		Course program for the first, second and third level (cycle) of studies			
1.	Course title	Design tools and systems for plastic masses			
2.	Code	129			
3.	Study group(s)	PInf.			
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	winter	7.	ECTS credits	6
8.	Instructor	Prof D-r Jasmina Caloska			
9.	Prerequisites	N/A			
10.	Course objectives (competences): Introduction to the characteristics of the plastic masses, division, usage, basic elements of the tools of production plastic parts, division of the technologies, databases of standard parts, machinery for producing plastic parts.				
11.	Course content: Development and application of plastic division and features plastic processing technologies, tools and their division and characteristics, tools elements, design, construction, selection of the plates, selection of plains of opening and running, disposal systems, input channels, heating and cooling systems, tools for simple castings, tools with more nests, tools with disposal plate, tools for castings in multiple colors, insertion tools with different inserts, types of machines for plastic processing technologies.				
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.	J. Caloska, A. Kochov	Design tools and systems for plastic masses	Faculty of Mechanical Engineering - Skopje	2011
		2.				
		3.				
	22.2.	Supplemental Instruction Materials				
		No.	Author	Title	Publisher	Year
		1.	J. Caloska	Construction of molds for plastic injection	(Internal script) Faculty of Mechanical Engineering - Skopje	2009
		2.	J. Lazarev	Tools for plastic deformation	Faculty of Mechanical Engineering - Skopje	1998
		3.	David O. Kazmer	Injection mold design engineering	Hanser Publishers Munich	2007