

Add. 3		Course program for the first, second and third degree of studies				
1.	Course title	Product Design with Plastics				
2.	Code	276				
3.	Study group(s)	Industrial Design (IND)				
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	2/III	7.	Number of ECTS credits	6	
8.	Instructor	Prof. Dr. Tatjana Kandikjan				
9.	Prerequisites	1. Materials, Technologies and Testing 2. Computer-Aided Design				
10.	Course objectives (competences): Study of the polymer materials and their application in industrial design of products. Modeling of products with aesthetic and ergonomic surfaces. Engineering design and analysis of plastic parts and assemblies.					
11.	Course content: Structure of polymers. Mechanical, chemical and physical properties of polymers. Plastics. Aesthetic properties. Part molding processes. Modeling of core and cavity. Product design with plastics. Modeling methods for integral product shapes. Processes for joining plastic parts. Joining elements. FME analysis of snap joints. Surface decoration.					
12.	Study methods: interactive lectures, auditory practice and/or laboratory practice, self running and/or team work projects, self learning					
13.	Total hours	180 hours				
14.	Hours allocation per activity:	28+28+90+34=180				
15.	Lectures/Lab	15.1.	Teaching lectures	28 hours		
		15.2.	Practice, seminars, team work	28 hours		
16.	Project Work/Assignments	16.1.	Project assignments	90 hours		
		16.2.	Selfrunning assignments			
		16.3.	Home studying	34 hours		
17.	Points/Marks:					
	17.1.	Tests			50 points	
	17.2.	Projects			15+35 points	
	17.3.	Attendance			0 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	All project assignments completed and at least 25 points from projects earned.				
20.	Language of Instruction	Macedonian				
21.	Course evaluation	Student questionnaire				
22.	Textbooks					
	22.1.	Instruction materials				
		No.	Author	Title	Publisher	Year

		1.	T. Kandikjan	Product Design with Plastics	Lecture notes and videos	2011
		2.				
		3.				
		Supplemental Instruction Materials				
	22.2.	No.	Author	Title	Publisher	Year
		1.	Chris Letteri	Plastic: Materials for Inspirational Design	Rockport Publishers	2001
		2.	Chris Letteri	Plastics 2 (Materials for Inspirational Design)	RotoVision	2006
		3.				