

Add. 3		Course program for the first, second and third degree of studies			
1.	Course title	Product development and design			
2.	Code	285			
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 degree)	First			
6.	Academic year / semester	Winter	7.	Number of ECTS credits	6
8.	Professor	Ass. Prof. Gligorce Vrtanoski			
9.	Preconditions for enrolling the course	None			
10.	Purpose of the course program (competences): Introduction to the development process and design of new products and services. Defining strategy of developing of the new products and services and realization of the management process.				
11.	Contents of the course program: Introduction to the development of products and services. Product life cycle, sources of success, the process of creating. Competition with aid of development capabilities. Concept development strategy for products and services. Maps and mapping. Marketing maps, engineering maps, production maps. Integrated mapping and process mapping. Aggregate plan of development projects. Structure development "funnel". Organization and leading of project teams for product development and services. Prototype test cycles. Tools and methods in the development of products and services. Integrated CAx systems.				
12.	Study methods: Interactive teaching, Laboratory and/or in-class exercises, individual and/or team work on projects, self-study.				
13.	Total available time period	6 ECTS x 30 hours = 180 hours			
14.	Available time assessment	30 + 30 + 30 + 30 + 60 = 180 hours			
15.	Educational activity module	15.1.	Teaching lectures	30 hours	
		15.2.	Practice, seminars, team work	30 hours	
16.	Other activity module	16.1.	Project assignments	40 hours	
		16.2.	Selfrunning assignments	20 hours	
		16.3.	Home studying	60 hours	
17.	Evaluation methods				
	17.1.	Tests			60 points
	17.2.	Projects			30 points
	17.3.	Activity and participation			10 points
18.	Evaluation criteria (points and marks)		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.	Signature and final exam requirements	Realized activity 17.2			
20.	Language used for performing the teaching	Macedonian language			
21.	Method used for following the teaching quality	Surveys and other forms of continuous evaluation			

22.	References				
22.1.	Main references				
	No.	Author	Title	Publisher	Year
	1.	Gligorce Vrtanoski	Non-authorized for Product development and Design	Faculty of Mechanical Engineering - Skopje	
	2.	Vladimir Dukovski	Managing of Product Development	UKIM	2001
3.					
22.2.	Additional references				
	No.	Author	Title	Publisher	Year
	1.				
	2.				
3.					