Add. 3		**Course program for the first, second and third level (cycle) of studies**		
1.	Course title	Dynamics of systems and processes		
2.	Code	140		
3.	Study group(s)	ACS		
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 Laze Trajkovski		
9.	Prerequisites	Systems and control - passed		
10.	Course objectives (competences): Introduction to basic working regimes of the systems. Static and dynamic characteristics of the systems. Mathematical models of some special systems and processes. Mathematical models and technical performance of the basic operating systems. Simulation of the dynamic behavior of the systems using software packages.			
11.	Course content: Introduction. Operation regimes of the systems. Static characteristics of the systems. Linearization of the static characteristics. Mathematical model of fluid flow reservoir and reservoir with zero degree of equalization. Mathematical models of hydraulic motors and other hydraulic components. Mathematical models for power machines. Mathematical models of flow pressure gas reservoir and non-flow thermally isolated gas reservoir. Mathematical models of systems with pure delay. Dynamic characteristics and technical performance of the basic systems: P-, D-and I-systems. Dynamic characteristics and technical performance of the combined systems: PD -, PI - PID - systems. Analysis of examples of the mathematical models of more complex systems.			
12.	Study methods: Interactive lectures with presentations, laboratory exercises, exercises, practical classes, tutorials (seminar work), preparation and presentation of project work, preparation of essays			
13.	Total hours	6ECTSx30 classes = 180 hours		
14.	Hours allocation per activity:	30 + 30 + 25 + 20 + 75 = 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	25 hours
		16.2.	Individual assignments	20 hours
		16.3.	Self-study	75 hours
17.	Points/Marks:			
	17.1.	Tests		80 points
	17.2.	Projects		10 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	Accomplished 17.2		
20.	Language of Instruction	Macedonian		
21.	Course evaluation	Student questionnaire		

22.	Textbooks	
	22.1.	Instruction materials

		No.	Author	Title	Publisher	Year
		1.	Л. Трајковски, А. Лазаревска	Динамика на објекти и процеси	(интерна скрипта)	2010
		2.				
		3.				
	22.2.	Supplemental Instruction Materials				
		No.	Author	Title	Publisher	Year
		1.	Д. Дебељковиќ	Динамика објеката и процеса	Машински факултет-Белград	1983
		2.	М. Стојиќ	Системи аутоматског управљања	Научна књига - Белград	1985