

Add. 3		Course program for the first, second and third level (cycle) of studies			
1.	Course title	Systems and Control			
2.	Code	293			
3.	Study group(s)	PE, TML, TE, HEWM, MJSE, IEM, MV, EE, Mech, 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 prof. d-r AtanaskoTuneski			
9.	Prerequisites	Mathematics 2 - signature			
10.	Course objectives (competences): Training of the students for stability analysis and analysis of the characteristics of continual control systems with and/or without feedback loop, design of controllers for achievement of desired performance of control systems.				
11.	Course content: What is control systems? Mathematical models of physical systems. Differential equations and linear systems. Stability of control systems. Transfer functions of continual control systems. Classification of control systems. Analysis and design of control systems using root locus method. Design of controllers.				
12.	Study methods: Interactive teaching, laboratory and/or auditory exercises, standalone and/or team project work, standalone learning.				
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	Finished project assignments			
20.	Language of Instruction	Macedonian			
21.	Course evaluation	Student questionnaire			
22.	Textbooks				
	22.1.	Instruction materials			
		No.	Author	Title	Publisher
1.	Allen Stubberud,	Schaum's Outline of	McGrawHill	1994	

		Ivan Williams, Joseph DiStefano	Feedback and Control Systems (translated)	Company, Inc.		
	2.	Laze Trajkovski	Collection of exercises from fundamentals of control systems (internal script)	Faculty of Mechanical Engineering - Skopje	2002	
	3.	W.Bolton	Control Engineering	Addison Wesley Publishing Company	1996	
	Supplemental Instruction Materials					
	22.2.	No.	Author	Title	Publisher	Year
		1.	D. Simic	Fundamentals of control systems	Naucna knjiga, Beograd	1990