

Add. 3		Course program for the first, second and third level (cycle) of studies			
1.	Course title	Water supply and irrigation systems			
2.	Code	291			
3.	Study group(s)	HEWM			
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	summer	7.	ECTS credits	6
8.	Instructor	asst. prof. d-r Ana Lazarevska,. prof. d-r Zvonimir Kostik			
9.	Prerequisites	Mathematics 1,2 – passed Fluid Mechanics - passed			
10.	Course objectives (competences): Introduction to the basic water supply and irrigation systems, equipment used in the systems and control systems. Design, exploitation and maintenance of water supply and irrigation systems				
11.	Course content: Water supply systems. Classification and characteristics. Water consumption. Basic parameters for the determination of the water consumption. Hydraulically determined and undetermined plumbing systems. Hydraulic calculation of the systems with single and multiple water sources and undefined subtraction. Hydraulic calculation of the systems with counter tank. Hydraulic calculation of the gravitational water supply system. Water supply pumping stations. Equipment in water systems. Valves. Compensators. Pressure regulators. Treatment (filtering) of the drinking water. Disinfection of the drinking water. Irrigation systems. Spray irrigation - a classic type. Irrigation with self-propelled aerial devices. Irrigation with hydromatics Irrigation systems "drip"				
12.	Study methods: Interactive lectures with presentations, laboratory exercises, exercises, tutorials (seminar work), team work, preparation and presentation of project work				
13.	Total hours	6ECTSx30 classes = 180 hours			
14.	Hours allocation per activity:	30 + 30 + 60 + 6 + 54 = 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	60 hours	
		16.2.	Individual assignments	6 hours	
		16.3.	Self-study	54 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	Accomplished 17.1, 17.2, 17.3,			
20.	Language of Instruction	Macedonian			
21.	Course evaluation	Student questionnaire			
22.	Textbooks				
	22.1.	Instruction materials			

		No.	Author	Title	Publisher	Year
		1.	Е. Петершен	Водовод	Градежна книга, Белград	1990
		2.	М. Радојковиќ	Рачунари во комунална хидротехника	Градежна книга, Белград	1989
		3.	Ф. Томиќ	Наводнување	Сојуз на инженери, Загреб	1988
		Supplemental Instruction Materials				
	22.2.	No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				