

Add. 3		Course program for the first, second and third level (cycle) of studies				
1.	Course title	Design of hydraulic machines and systems				
2.	Code	273				
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	prof. d-r Valentino Stojkovski				
9.	Prerequisites	Fluid Mechanics – passed Basics of turbomachines – signature Hydraulic volume machines - signature				
10.	Course objectives (competences): Introduction to procedures for design the hydro-mechanical equipment and hydro power machines and systems, defining of the operational conditions and selection (adoption) the design parameters, settings the design parameters, methods for checking the operating parameters of the designed hydraulic machines and systems.					
11.	Course content: Introduction to the procedure for the design of hydraulic machines and systems. Hydro mechanical equipment - defining the design conditions and operational parameters with a equipment selection. Hydro power machines and systems. Design of hydraulic transport systems. Technical and economical evaluation models for designed hydraulic machines and systems. Projects designed.					
12.	Study methods: interactive lectures, auditory practice and/or laboratory practice, self running and/or team work projects, self learning					
13.	Total hours		6 ECTS x 30 hours = 180 hours			
14.	Hours allocation per activity:		30 + 30 + 80 + 20 + 40 = 20 hours			
15.	Lectures/Lab	15.1.	Lectures	30 hours		
		15.2.	Lab (student work)	30 hours		
16.	Project Work/Assignments	16.1.	Project assignments	80 hours		
		16.2.	Individual assignments	20 hours		
		16.3.	Self-study	20 hours		
17.	Points/Marks:					
	17.1.	Tests	20 points			
	17.2.	Projects	70 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					
20.	Language of Instruction		Macedonian			
21.	Course evaluation		Student questionnaire			
22.	Textbooks					
	22.1.	Instruction materials				
		No.	Author	Title	Publisher	Year
1.	Ristic M.	Pumpi i pumpni stanici				

		2.	Basta T.M.	Masinska hidraulika	Naucna kniga Beograd	1998
		3.	Stephenson D.	Pipeline design for water engineering	ELSEVIER	1989
	22.2.	Supplemental Instruction Materials				
		No.	Author	Title	Publisher	Year
		1.		Katalozi za hidromehanicka oprema i komponenti		
		2.		Standardi i normativi za hidraulicni masini (IEC, ISO, EN, ASME)		