

Add. 3		Course program for the first, second and third level (cycle) of studies				
1.	Course title	Transport of Solids – Hydraulic and Pneumatic Conveying				
2.	Code	328				
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	Ana Lazarevska, Asst. Prof. D.Sc.				
9.	Prerequisites	Mathematics 1,2 – passed Fluid Mechanics – signature				
10.	Course objectives (competences): Introduction to water, oil and gas pipeline systems and systems for hydraulic and pneumatic convey. Mathematical models for hydraulic calculation of the systems and their components. Introduction to systems' exploitation, operation and maintenance.					
11.	Course content: Fluid transport: Physical properties of fluids, water, oil, and gas pipelines, techno-economic calculation of pipelines. Transport of solid materials – Hydraulic and Pneumatic Conveying: Physical properties of mixtures, introduction to fluidization, pneumatic convey, devices and components, hydraulic convey, devices and components.					
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 + 30 + 90 = 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			
		16.2.	Individual assignments	30 hours		
		16.3.	Self-study	90 hours		
17.	Points/Marks:					
	17.1.	Tests			65 points	
	17.2.	Projects			25 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.	М. Шашиќ	Транспорт флуида и чврстих материјала цевима	Научна књига, Београд	1990	
		2.	М. Шашиќ	Прорачун транспорта флуида и чврстих материјала цевима	Научна књига, Београд	1989	
		3.					
		Supplemental Instruction Materials					
	22.2.	No.	Author	Title	Publisher	Year	