

Add. 3		Course program for the first, second and third level (cycle) of studies				
1.	Course title	Technical gases and compressor stations				
2.	Code	329				
3.	Study group(s)	TI				
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.	Number of ECTS credits	6	
8.	Instructor	Prof. Milan Šarevski Ph.D				
9.	Prerequisites	none				
10.	Course objectives (competences): Introduction and study of: technical gases, thermodynamic properties, production, transportation, storage, usage, application; thermal and flow calculations; gas systems; exploitation. Compressor stations – systems for cooling, drying, filtration and storage; design of compressor stations and systems					
11.	Course content: Technical gases: production, application, physical and chemical characteristics, thermodynamic calculations: state, change of state, compression, expansion, separation of gas mixtures, cryogenic and adsorption systems for liquefaction and separation; storage and transport; gas systems, gas networks, systems for measurement and reduction. Compressor stations – piston compressor, turbocompressor and screw compressor; systems for cooling, drying, filtration and storage; design of compressor station, exploitation and maintenance.					
12.	Study methods: Teaching lectures, auditory/laboratory practice, self/team work, home studding					
13.	Total hours	6 ECTS x 30 hours = 180 hours				
14.	Hours allocation per activity:	30 + 30 +10 +10 +100 = 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	30 hours		
		16.2.	Individual assignments	30 hours		
		16.3.	Self-study	60 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	None				
20.	Language of Instruction	Macedonian				
21.	Course evaluation	Student questionnaire				
22.	Textbooks					
	22.1.	Instruction materials				
No.		Author	Title	Publisher	Year	

		1.	M.Sharevski	Technical gases and compressor plants	UKIM	
		2.	I.Cerepnalkovski	Compressors	UKIM	1994
		3.	M.Sharevski	Design of piston, scroll, rotary and turbo compressors and plants	UKIM	
		Supplemental Instruction Materials				
	22.2.	No.	Author	Title	Publisher	Year
		1.		Gas Engineers Handbook	Industrial press	1994
		2.				
		3.				