No. 19

Attachment No.3		**Course syllabus for First cycle studies**				
1.	**Course title**	**Chemical metallurgy 2**				
2.	**Code**	MDE4M2				
3.	**Study Program**	Metallurgical digital engineering				
4.	**Study program organizer (unit,institute, department, division)**	Faculty of Technology and Metallurgy, University “Ss. Cyril and Methodius” in Skopje				
5.	**Degree (first, second, third cycle)**	First cycle				
6.	**Academic year / semester**	Second year, IV sem.	7.	**Number of ECTS**	7	
8.	**Instructors**	Prof. Perica Paunović				
9.	**Prerequisites for courseenrollment**	Mathematics 1				
10.	**Objectives of the course syllabus (competencies):** Deepening knowledge about thermodynamic and kinetic analysis for various metallurgical processes.					
11.	**Content of the course:** Thermodynamic and kinetic analysis of metallurgical processes: 1. Drying, 2. Stability of compounds important in metallurgy, 3. Roasting, 4. Combustion, 5. Reduction of metal oxides, 6. Metallurgical slags, 7. Liquation and crystallization refining, 8. Evaporation, sublimation, and condensation, 9. Hydrometallurgical processes, 10. Electrometallurgical processes.					
12.	**Study methods:** Lectures and exercises, consultations, project (homework, seminar) assignments, home study (exam preparation)					
13.	**Total available time**	210				
14.	**Allocation of available time**					
15.	**Teaching activities**	15.1.	Lectures	45		
		15.2.	Exercises (laboratory, computational), teamwork	45		
		15.3	Industrial practice	0		
16.	**Other types of activities**	16.1.	Project assignments	20		
		16.2.	Independent assignments	20		
		16.3.	Home study	80		
17.	**Grading system**					
	17.1.	Tests: pts		80		
	17.2.	Seminar work/project, written and oral presentation: pts		10		
	17.3.	Final exam: pts		10		
18.	**Grading criteria (points/grade)**	Up to 61 points		5 (five) (F)		
		From 61 to 69 points		6 (six) (E)		
		From 70 to 79 points		7 (seven) (D)		
		from 80 to 89 points		8 (eight) (S)		
		From 90 to 95 points		9 (nine) (B)		
		from 95 to 100 points		10 (ten) (A)		

19.	**Prerequisites for taking the final exam**		Minimum 11 pts from activities 17.1 and 17.2			
20.	**Language in which lectures are conducted**		English			
21.	**Method for monitoring the quality of lectures**		Anonymous student survey			
22.	**LITERATURE**					
	22.1.	Compulsory literature				
		No.	Author	Title	Publisher	Year
		1.	Perica Paunović,	Chemical metallurgy 2	University “Ss. Cyril and Methodius” in Skopje	2023
		2.				
		3.				
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	C. K. Gupta	Chemical Metallurgy: Principle and Practice	WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	2003
		2.	Ž. D. Živković	Teorija metalurških procesa, opšti deo	Univerzitet u Beogradu, Tehnički fakultet u Boru	1991
		3.				