No. 45

Attachment No.3		**Course syllabus for First cycle studies**			
1.	**Course title**	Mineral processing			
2.	**Code**	MDE2M4			
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**	First year, II sem.	7.	**Number of ECTS**	6
8.	**Instructors**	D-r. Boško Boškovski, associate professor			
9.	**Prerequisites for courseenrollment**	/			
10.	**Objectives of the course syllabus (competencies):** Acquiring knowledge of the mineral processing				
11.	**Content of the course:** - Mineral raw materials, mettalic ores. - Basic principles of mineral processing. - Size reduction: crushing, grinding. - Size control: screening, classification, elutriation, hydrocyclone. - Enrichment: separation, flotation, magnetic separation, dense media separation, leaching. - Analysis method: methods of sampling, granulometric analysis, XRD analysis, microscopic examination, thermal analysis, chemical analysis, basic physical properties (specific mass, volume mass, porosity, pressure strength, water absorption).				
12.	**Study methods:** Lectures and exercises, consultations, project (homework, seminar) assignments, home study (exam preparation)				
13.	**Total available time**	180			
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	15	
		16.2.	Independent assignments	15	
		16.3.	Home study	60	
17.	**Grading system**				
	17.1.	Final exam: pts		80	
	17.2.	Seminar work/project, written and oral presentation: pts		10	
	17.3.	Activity: 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 17.2 and 17.3			

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.	A. Gupta D. Yan	Mineral Processing Design and Operations,	Elsevier	2006
		2.	A.B. Wills T.Napier -Munn,	Mineral Processing Technology, 7th Edition,	Elsevier Science & Technology Books	2006
		3.	D.K. Mishra	Mineral processing, laboratory manual	Department of Metallurgy & Materials Engineering Veer Surendra Sai University of Technology Burla,	
	22.2.	Additional literature				
		No.	Author	Title	Publisher	Year
		1.	B. Boškovski S. Bogoevski	Mineral processing - laboratory manual	Faculty of Technology and Metallurgy, “Ss. Cyril and Methodius” University in Skopje	2023
		2.	D. Knežević	Priprema mineralnih surovina	Rudarsko-geološki fakultet Univerzitet u Beogradu	2001