

Course syllabus for First cycle studies							
1.	Course title	Production of Metals from Secondary Raw Materials					
2.	Code	MDE6E					
3.	Study Program	Metallurgical Digital Engineering					
4.	Study program organizer (unit, institute, department, division)	Faculty of Technology and Metallurgy					
5.	Degree (first, second, third cycle)	first					
6.	Academic year / semester	Third	7.	Number of ECTS 4	Sixth Semester		
8.	Instructors	Dr. Goran Nachevski, full professor					
9.	Prerequisites for course enrollment						
10.	Objectives of the course syllabus (competences): The aim of the course is acquiring knowledge from the extraction of metals from secondary raw materials – waste metal materials Acquired skills (competences):						
11.	Content of the course: Introduction, Secondary Raw Materials in Ferrous Metallurgy, Preparation Processes for Secondary Raw Materials, Processes for Producing Steel from Secondary Raw Materials, Secondary Raw Materials in Non-Ferrous Metallurgy, Extraction of Copper from Secondary Raw Materials, Extraction of Lead from Secondary Raw Materials, Extraction of Zinc from Secondary Raw Materials, Extraction of Aluminum from Secondary Raw Materials, Processes for the Extraction of Rare Metals from Waste Metals						
12.	Study methods:						
13.	Total available time	150					
14.	Allocation of available time						
15.	Teaching activities	15.1.	Lectures - theoretical teaching. classes		30		
		15.2.	Exercises (laboratory, lecture), seminars, teamwork: classes		30		
		15.3.	Practice: classes		0		
16.	Other types of activities	16.1.	Project tasks: classes		15		
		16.2.	Independent tasks: lessons		15		
		16.3.	Homework - assignments		60		
17.	Grading system						
	17.1.	Tests: points			80		
	17.2.	Seminar paper/project, written and oral presentation: points			10		
	17.3.	Final exam: points			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			
20.	Language in which lectures are conducted			
21.	Method for monitoring the quality of lectures			
22.	LITERATURE			
	22.1. Compulsory literature			
	No.	Author	Title	Publisher
	1.	I. Ilić, Z. Gulišija, N. Radovanović, M. Sokić, V. Matković, J. Marinković	Resources and Recycling of Secondary Non-Ferrous Metal Raw Materials	RTB – Bor, Institute for Copper, Indok Cente
	2.	N. Lyakov	Secondary Metallurgy of Non-Ferrous Metals and Alloys	Martilen, Sofia
	22.2. Additional literature			
	No.	Author	Title	Publisher
	1.			
	2.			
	3.			