

Faculty:	Faculty of Geosciences	
Name of study program:	Materials and Metallurgy	
Department:	Materials and Metallurgy	
Level:	Bachelor	
The code of subject:	9	
Subject:	Welding and cutting	
Subject Status:	Compulsory / winter	(Winter / Summer)
Semester:	IV	(According to approved programe)
Total hours:	2+2	(According to approved programe)
ECTS:	4	(According to approved programe)
Schedule / Hall		
Academic year:		
Professor:	Muharrem Zabeli	
Assistants:	Lecturer:	
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Course description:	Introduction. Welding of materials. Gas welding. Resistance welding. Arc welding. Filler material for welding. Processes alike to welding. Metallurgy of welding. Weldability of metals and determination of weldability . Thermodynamics of welding. Quality of welded joints. Control of welding. Special welding processes. Heat treatment of welded joints. Education and training of welders. Hazards and work safety during welding	
Course objectives:	- training of students with the basic concepts of the welding process and welding-like processes, -training students to select a concrete welding method, depending on the need, -training students to select additional welding material and determine the optimal welding regime, depending on the need, -training students for the realization of professional supervision of the realization of the welding process in industrial conditions, -training students to control the welded joint, identifying defects present in the welded joint and determining its quality, -training students for independent use of professional literature and other resources in the field of welding and welding-like processes,	
Learning outcomes:	1-know the basic principles of the welding process and similar welding processes, 2-to understand the basic methods of fusion welding and pressure welding (pressure), 3rd uses special welding methods, 4-analyze and compare welding methods with strengths and weaknesses. 5-to confirm all the accompanying phenomena that accompany the welding process, such as. physicochemical changes and errors in the welded joint, 6-to realize and manage the tests and control of the welded joints (connections) and on the basis of the obtained results to evaluate the right choice of the welding regime and to evaluate the quality of the welded joint,	
Designed study plan:	Week	Lectures which will be held
	First week:	Introduction, Welding of Materials
	Second week:	Electrical resistance welding
	Third week:	Electric arc welding

		Fourth week:	Additional welding material		
		Fifth week:	Welding-like processes		
		Sixth week:	First intermediate assessment-After the completion of these chapters		
		Seventh week:	Welding metallurgy		
		Eighth week:	Weldability of metals and weldability tests		
		Ninth week:	Welding thermodynamics		
		Tenth week:	Quality of welded joint		
		Eleventh week:	Welding control		
		Twelfth week:	Second evaluation		
		Thirteenth week:	Special welding processes		
		Fourteenth week:	Heat treatment of welded joint		
		Fifteenth week:	Education and training of welders		
Literature	Basic	[1] B.Bytyci, H.Osmani, Saldimi I, Prishtinë, 1996. [2] B.Bytyci, H.Osmani, Saldimi II, Prishtinë, 1997. [3] S. Kumi, T.Hajnaj, Teknologjia e materialeve-Për konstruksione, Tiranë 1984. Kontrolli i bashkësive të salduara, Prishtinë, 2009.			
	Additional				
Teaching methods		Interactive lectures, numerical and exercises. Tests during lectures			
Contribution on student load					
	Activity		Hours	Days/week	Total
	Lectures		2	15	30
	Exercise theoretical/laboratory		2	15	30
	Practice work				-
	Contact with lecturer/consultations		3	2	6
	Field exercises		2	2	4
	Mid-terms, seminars		2	2	4
	Homework		4	3	12
	Individual time spent studying (at the library or home)		2	15	30
	Final preparation for the exam		2	1	2
	Time spent in evaluation (tests, quiz, final exam)		2	2	4
	Projects, presentations, etc.		1	3	3

Evaluation methods	Tests / Colloquia	2x15 (%)
	Practical test during exercises	10 (%)
	Seminar paper	10 (%)
	Homework during the semester	10 (%)
	Final exam 40 (%)	40 (%)
Academic policies and rules of conduct:	Regular attendance is required of students in lectures and exercises. Rules of conduct as quieting learning, access to the hall of learning time, turn off cell phones, etc. are also mandatory.	