



POLYTECHNIC OF MEĐIMURJE IN ČAKOVEC

COURSE SYLLABUS

ACADEMIC YEAR: 2020/2021

1. GENERAL COURSE INFORMATION

1.1 Course name	ZAVARIVANJE 2 (WELDING 2)			
1.2 Study program/s	MEV STUDIJ ODRŽIVOG RAZVOJA – TERMOTEHNIČKO STROJARSTVO			
1.3 Course status (O,E)	E	1.6 Mode of instruction (number of hours)	Lectures	15
1.4 Course code	According to MOZVAG		Exercises	30
1.5 Course abbreviation	ZAV2-TTS		Seminars	-
1.6 Semester	5		E-learning	-
1.7 ECTS	4	1.7 Place and time of instruction	MEV – after lectures, duration 1 hour	

2. TEACHING STAFF

2.1 Course leader/s-title	Vjeran Panić	contact	vjeran.panic@mev.hr
		contact	
2.2 Assistant/s- title	-	contact	-
		contact	
2.3 Instruction held by- title	-	contact	-

3. COURSE DESCRIPTION

3.1 Course goals	Introducing basic welding technologies and their features to students							
3.2 Prerequisites	None							
3.3 Course outcomes	4							
3.4 Course content	45 working hours divided as 15 hours of lecturing and 30 hours of exercises							
3.5 Types of coursework	Lectures	Y	Exercises	Y	Blended e-learning		Individual activities	Laboratory
	Seminars and workshops		Distant learning		Field classes	Y	Multimedia and network	Mentorship
	Other	NO						
3.6 Language of instruction	Croatian							
3.7 Monitoring students' work (enter the number of ECTS credits for each activity so that the total number of ECTS credits is equal to the total ECTS value of the course, 1 ECTS = 30 hours)	Class attendance		Seminars		Essay			
	Class activity		Project		Report/paper			
	Midterm exams		Practical task		Continuous knowledge check			
	Written exam	2	Experimental work					
	Oral exam	2	Research					
3.8 Assessment and evaluation of students' work during classes and at the final exam	Activity specification		Percent %		Points			

Written exam	72%	20	
Written exam	28%	8	
Total:	100%	28	

3.9 Assessment criteria – analysis per learning outcomes	Ways of evaluating learning outcomes						
		Attendance	Activity	Mid-term exam 1	Mid-term exam 2	Practical work	Total
	Define welding control and welding errors.						7
	Explain NDT and methods of repair welding.						7
	List and explain fundamental rules of forming welded structures, heat deformations and straightening.						7
	Explain welding economy and term of capacity.						7
	Total						28
	<p>Grading of outcomes (in order to pass the mid-term exam/exam the student must achieve at least 50% points for each learning outcome)</p> <p>Points Grade</p> <p>24 – 28 excellent (5)</p> <p>21 – 23,99 very good (4)</p> <p>17,5 – 20,99 good (3)</p> <p>14 – 17,49 pass (2)</p> <p>0 – 13,99 fail (1)</p>						

3.10 Specific features related with taking the course	NO
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3.11 Students obligations	Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 50% of the total number of hours of lectures and exercises in order to exercise the right to take the exam.
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	<p>If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam.</p> <p>Attendance can be offset by online tuition, organised webinars and added assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from one teaching unit is counted as one absence. Delays and apologies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.</p>			
3.12 Written assignments	NO			
3.13 Required reading	1.	Panić,V. Pisani materijali za kolegij Zavarivanje 2, MEV, 2019. - 2020.		
3.14 Additional reading	1.			
4 ADDITIONAL COURSE INFORMATION				
4.1 Quality control	The quality of the program, teaching process, teaching skills and level of mastery of the material will be established by conducting a written evaluation based on questionnaires, and in other standardised ways and in accordance with the by-laws of the Polytechnic of Međimurje in Čakovec.			
4.2 Contact the teacher	Students can contact the teacher during the office hours and during classes, while for short questions and explanations they can contact him/her any day during working hours by coming in person or by landline. It is also possible to ask questions by e-mail, which will be answered in 48 hours at the latest. It is desirable for students to come as often as possible for any possible questions during the teacher's office hours.			
4.3 Information about the course	It is the obligation of each student to be regularly informed about the course. All notifications about the classes or possible postponement of classes will be posted on the bulletin board and on the website of the Polytechnic at least 24 hours in advance.			
4.4 Course contribution to the study program	Course expends advanced technical and practical knowledge about welding and applied technologies.			
5. ANALYSIS OF COURSE TOPICS (the number of hours is equal to the number of lectures and exercises of the course)				
LECTURES				
Hours	Topic and description	Method	Learning outcomes	Course outcome
		• Direct teaching (lecture, instruction, pp presentation)		

		<ul style="list-style-type: none"> • Discovery learning (individual, lead, discussion) • Group learning • Case study • Field classes... 		
1.	Course introduction. Repetition of the most important facts form course ZAVARIVANJE 1.	Direct teaching	Outcome No 1	
2.	Welding ability of materials.	Direct teaching	Outcome No 1	
3.	Types of control and supervision of welding process. Weld quality.	Direct teaching	Outcome No 2	
4.	Welding errors.	Direct teaching	Outcome No 2	
5.	NDT. Non-destructive testing methods.	Direct teaching	Outcome No 2	
6.	Repair welding.	Direct teaching	Outcome No 2	
7.	Heat deformations and straightening.	Direct teaching	Outcome No 3	
8.	Marking welds in documentation.	Direct teaching	Outcome No 3	
9.	Forming welded structures.	Direct teaching	Outcome No 3	
10.	Basic calculation of welded structures	Direct teaching	Outcome No 4	
11.	Welding economics	Direct teaching	Outcome No 4	
12.	Certificates in welding.	Direct teaching	Outcome No 4	
13.				
14.				
15.	Repetition of complete course	Direct teaching	Outcomes No 1 - 4	
EXERCISES/ SEMINARS				
Hours	Topic and description	Method <ul style="list-style-type: none"> • Direct teaching (lecture, instruction, pp presentation) • Discovery learning (individual, lead, discussion) • Group learning • Case study • Field classes... 	Learning outcomes	Course outcome
1.				
2.	Welding ability of materials.	Direct teaching	Outcome No 1	
3.	Types of control and supervision of welding process. Weld quality.	Direct teaching	Outcome No 2	
4.	Welding errors.	Direct teaching	Outcome No 2	
5.	NDT. Non-destructive testing methods.	Direct teaching	Outcome No 2	
6.	Repair welding.	Direct teaching	Outcome No 2	
7.	Heat deformations and straightening.	Direct teaching	Outcome No 3	
8.	Marking welds in documentation.	Direct teaching	Outcome No 3	
9.	Forming welded structures.	Direct teaching	Outcome No 3	
10.	Basic calculation of welded structures	Direct teaching	Outcome No 4	
11.	Welding economics	Direct teaching	Outcome No 4	
12.	Certificates in welding.	Direct teaching	Outcome No 4	

13.	Exercises in welding practicum.	Direct teaching	Outcomes No 1 - 3	
14.	Field classes in local company	Field classes	Outcomes No 1 - 4	
15.				