



Subject card

Subject name and code	, PG_00058715						
Field of study	Materials Engineering, Materials Engineering						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies	Subject group			Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish		
Semester of study	1	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład Technologii Materiałów Konstrukcyjnych i Spajania -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Grzegorz Rogalski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	0.0	45
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	45		5.0		50.0	100
Subject objectives	Familiarize students with advanced bonding and related bonding processes						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_K01	Students are able to identify the difficulties resulting from the implemented bonding process. They are able to set directions of activities and priorities in the pursuit of solving specific problems using their own knowledge and experts.			[SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills		
	K7_W05	Students are able to identify the necessary and available tools, techniques and resources to solve specific technological problems.			[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
	K7_U01	On the basis of a given process problem, students are able to obtain information enabling its verification and solution with appropriate conclusions.			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
	K7_W04	Students are able to determine the influence of the fundamental variables of the discussed processes on the properties of the obtained connections.			[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
	K7_U02	Students are able, on the basis of the information obtained, to determine the directions of personal development and education in a given process corresponding to specific requirements			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
Subject contents	Basic concepts and definitions. Classification of welding processes. Laser welding. Plasma welding. Electron beam welding. Modern variations of welding with classical processes. Solid state bonding. Special bonding processes.						

Prerequisites and co-requisites	Basic information on bonding processes		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Lecture: Exam / Assessment	60.0%	60.0%
	Laboratory	60.0%	40.0%
Recommended reading	Basic literature	Pilarczyk J. (red.): Poradnik inżyniera. Spawalnictwo. tom I. Wydawnictwo Naukowe PWN, Warszawa. Pilarczyk J. (red.): Poradnik inżyniera. Spawalnictwo. tom II. Wydawnictwo Naukowe PWN, Warszawa.	
	Supplementary literature	Klimpel A.: Technologie laserowe. Spawanie, napawanie, stopowanie, obróbka cieplna i cięcie. Wydawnictwo Politechniki Śląskiej, Gliwice.	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Describe the essential variables of the selected bonding process Determine the influence of the fundamental variables of the bonding process on selected features of the joints made Draw a block diagram between the interactions of the essential variables of the indicated process Explain the relationship between the choice of the bonding process and the degree of complexity of the product		
Work placement	Not applicable		