GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00073763						
Field of study	Mechanical Engineering						
Date of commencement of studies	February 2026		Academic year of realisation of subject	2026/2027			
Education level	second-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery	at the university			
Year of study	1		Language of instruction	Polish			
Semester of study	2		ECTS credits	4.0			
Learning profile	general academic profile		Assessment form	assessment			
Conducting unit	Division of Structural Materials Technology and Welding -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Jacek Tomków				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	30.0	0.0	60
	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	60		9.0	31.0		100
Subject objectives	The objective of this course is to familiarize students with the elements of managing a technological process in the broad sense, with a particular focus on the welding of alloy materials.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_K13] is ready for responsible performance of proffesional roles, considering ever-changing need of the society, including self developement and supporting and fullfiling work ethics	The student understands the importance of fulfilling professional roles responsibly within changing social and economic conditions. They adhere to professional ethical standards and contribute to the advancement of scientific and engineering knowledge in their field.	[SK1] Assessment of group work skills [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice
[K7_U04] creatively designs or modifies devices, processes or systems specific to Mechanics and Mechanical Engineering, using computer-aided design systems in the form of technical documentation, taking into account aspects of economic analysis, using appropriate tools and techniques	The student is able to creatively design or modify production and technological systems and processes in accordance with specific requirements, taking into account technical, non-technical, and economic aspects. They employ appropriate design techniques relevant to production management and engineering.	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools
[K7_W03] demonstrates a well-structured and theoretically grounded knowledge of the key issues in Mechanical Engineering to enable the design and diagnosis of mechanical systems, processes and devices	The student is able to develop procedures and solutions related to the creation and improvement of a quality management system—including an integrated system—by utilizing available analytical and IT tools.	[SW3] Assessment of knowledge contained in written work and projects
[K7_K101] acknowledges the importance of knowledge related to the field of study in solving cognitive and practical problems, critically assessing the information obtained	The student is able to modify welding process technology based on information gathered from the outcomes of a given process.	[SK5] Assessment of ability to solve problems that arise in practice
[K7_W13] explains the main principles of individual and teamwork organization, including various forms of entrepreneurship utilizing knowledge from the field of engineering and technical sciences and disciplines relevant to the course of study	The student is able to explain the fundamental principles of organizing individual and team work, including within various forms of entrepreneurship. They apply knowledge from the fields of engineering and technical sciences—as well as disciplines related to their field of study—to practical, team-based activities.	[SW1] Assessment of factual knowledge

Subject contents

Course content – lecture

Quality systems used in an enterprise. Quality in welding. Quality control in welding processes. Welding plan. Variables in welding processes.

Course content – project

Welding technology plan, incorporating quality systems.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Exam/test	51.0%	60.0%
Project	51.0%	40.0%

Recommended reading

Basic literature	Czuchryj J.: Kontrola jakości prac spawalniczych, KaBe 2003 Klimpel A.: Kontrola i zapewnienie jakości w spawalnictwie. Tom 1, Wydawnictwo Politechniki Śląskiej Szymański A. Kontrola i zapewnienie jakości w spawalnictwie. Tom 2, Wydawnictwo Politechniki Śląskiej Czuchryj J., Świergoł S.: Podstawy organizacji kontroli jakości w spawalnictwie, Instytut Spawalnictwa Gliwice, 2003
Supplementary literature	Pilarczyk J.: Poradnik inżyniera Spawalnictwo Tom 1, Tom 2 Wydanie II, Wydawnictwo: Naukowe PWN, 2017
eResources addresses	

Example issues/ example questions/ tasks being completed	1. Podaj standardy związane z zarządzaniem jakością w procesach spawalniczych z uwzględnieniem implementacji do wytwarzania konstrukcji stalowych 2. Podaj elementy jakie powinien zawierać plan spawania 3. Wymień podstawowe zmienne istotne w procesie spawania łukowego elektrycznego
Practical activites within the subject	Not applicable

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