



Subject card

Subject name and code	Quality management in welding, PG_00055247						
Field of study	Management and Production Engineering						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2023/2024		
Education level	first-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	3		Language of instruction		Polish None		
Semester of study	5		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	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		dr hab. inż. Grzegorz Rogalski				
			dr inż. Jacek Haras				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	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	30		8.0		37.0	75
Subject objectives	The aim of the course is to familiarize students and consolidate knowledge in the field of quality management systems and related standards, including quality and technological documentation.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U03] is able to communicate using various techniques in the professional environment and other environments, has language skills enabling free communication in the field of technical sciences related thematically to management and production engineering	The student knows the proper nomenclature related to quality management systems and is able to clearly formulate his statements. Uses the technical nomenclature related to the field of study.	[SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task
	[K6_W08] has basic management knowledge, including process and product quality management, and detailed knowledge of integrated and standardized quality, environmental, health and safety management systems	The student is able to make a proper assessment of the quality management system in relation to the requirements set for the company, including related systems, e.g. related to welding processes and OHS	[SW2] Assessment of knowledge contained in presentation
	[K6_U04] is able to develop documentation in the area of preparation, implementation and control of production processes in Polish and in a foreign language considered basic for scientific fields, is able to identify and formulate the basic objectives of quality management in the product life cycle, is able to use information and communication techniques appropriate to the implementation of tasks typical in engineering activities including preparation, production and supervision of the manufacturing process	The student is able to develop procedures related to the creation of a quality management system, including a system integrated with other systems, using the available tools.	[SU3] Assessment of ability to use knowledge gained from the subject
	[K6_K02] is able to interact and work in a group, assuming different roles, can inspire and organize the learning process of others, properly identifies priorities for realization of a task specified by themselves or others	Based on the provided input data, the student is able to determine the right direction in creating a quality management system	[SK4] Assessment of communication skills, including language correctness [SK1] Assessment of group work skills
Subject contents	As part of the course, students will learn about quality management systems related to welding processes and the basics of the ISO 9001 system. A series of EN ISO 3834 standards will be discussed in detail. Attention will be paid to other systems that contain references to bonding processes in their structure. The methods of creating technical documentation under the applicable standards and regulations will be discussed. Attention will be paid to the practical aspects of the systems discussed.		
Prerequisites and co-requisites	None		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Lecture	56.0%	50.0%
	Laboratory	56.0%	50.0%

Recommended reading	Basic literature	<p>Czuchry J.: Kontrola jakości prac spawalniczych, KaBe 2003</p> <p>Klimpel A.: Kontrola i zapewnienie jakości w spawalnictwie. Tom 1, Wydawnictwo Politechniki Śląskiej</p> <p>Szymański A. Kontrola i zapewnienie jakości w spawalnictwie. Tom 2, Wydawnictwo Politechniki Śląskiej</p> <p>Czuchry J., Świergoł S.: Podstawy organizacji kontroli jakości w spawalnictwie, Instytut Spawalnictwa Gliwice, 2003</p> <p>Pilarczyk J.: Poradnik inżyniera Spawalnictwo Tom 1, Tom 2 Wydanie II, Wydawnictwo: Naukowe PWN, 2017</p> <p>EN ISO 3834-1, 2, 3, 4, 5: 2007</p> <p>EN ISO 9001:2015</p> <p>EN 1090-1, 2</p>
	Supplementary literature	Not require
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Zarządzanie jakością w spawalnictwie, W, L, ZIP, Sem.5, Zima 2023/2024 - Moodle ID: 33870</p> <p>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=33870</p>
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. Specify the standards related to quality management in welding processes, including the implementation for the production of steel structures 2. Explain the principle of PDCA 3. What is a quality management system and what elements it contains 4. Develop a process map in a manufacturing plant using welding processes 5. Enter the elements that should be included in the welding plan 6. List the basic variables important in the process of electric arc welding 	
Work placement	Not applicable	