



## Subject card

Subject name and code	, PG_00065680						
Field of study	Mechanical Engineering						
Date of commencement of studies	February 2024		Academic year of realisation of subject		2024/2025		
Education level	second-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		4.0		
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 inż. Bogdan Ścibiorski				
	Teachers		dr inż. Bogdan Ścibiorski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	20.0	0.0	0.0	0.0	50
	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	50		10.0		40.0	100
Subject objectives	To present the importance and principles of standardization in mechanical engineering, considering the major standardizing organizations and the procedures for developing standards, and to develop practical skills for applying current standards in technical documentation and design processes.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_U71] is able to apply knowledge from humanistic, social, economic or legal sciences in order to solve problems	Is able to identify potential conflicts between standard requirements and market or societal expectations and propose possible ways to resolve them. Utilizes legal and economic knowledge to align engineering processes with existing standards, minimizing the risk of non-compliance.	[SU3] Assessment of ability to use knowledge gained from the subject
	[K7_W81] has knowledge of complex grammatical structures and diverse lexical resources needed to communicate in foreign language in terms of general and specialist language related to field of study	Has a basic knowledge of linguistic structures and specialized terminology necessary for understanding and analyzing normative documents in a foreign language. Is able to utilize foreign-language publications and specifications related to standardization, extracting key information and incorporating it into work pertaining to mechanical engineering.	[SW3] Assessment of knowledge contained in written work and projects
	[K7_K71] is able to explain the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment	Can justify the importance of standards and regulations for safety, consumer protection, and fair competition. Considers social and cultural contexts when discussing the impact of standardization on technological progress and sustainable development.	[SK5] Assessment of ability to solve problems that arise in practice
	[K7_W71] has general knowledge in humanistic, social, economic or legal sciences, including their fundamentals and applications	Understands the interrelations between technical standards and legal or economic regulations, recognizing the impact of standardization on global commerce. Can explain how the development of standards shapes the social and legal conditions under which mechanical engineering enterprises operate	[SW2] Assessment of knowledge contained in presentation
Subject contents	<p>This course provides an introduction to the significance of standardization in mechanical engineering and its role in international trade. It covers major standardization bodies such as ISO, DIN, ANSI, and PN, as well as the process of creating standards and technical regulations. Special attention is given to standards related to material properties, mechanical testing, and product certification. Case studies will illustrate how standardization is applied in various industrial sectors, including ISO 527-4 and ISO 527-5 for tensile testing of fiber-reinforced composites.</p> <p>Practical sessions involve analyzing selected standards and their use in real-world examples, such as preparing technical documentation in accordance with current standards. Participants will work on actual design tasks that require meeting standard requirements.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	written assignments or presentations	60.0%	50.0%
	discussions	60.0%	50.0%
Recommended reading	Basic literature	Marek Bugdol <i>System zarządzania jakością według normy ISO 9001:2015</i>	
		Jerzy Łunarski <i>Normalizacja i standaryzacja</i>	
		Krzysztof Marzec <i>Wprowadzenie do inżynierii mechanicznej</i>	
	Supplementary literature	Jerzy Łunarski <i>Normalizacja i zarządzanie jakością w logistyce</i>	
	eResources addresses	Adresy na platformie eNauczanie:	

Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> <li>1. Fundamentals and definitions of standardization</li> <li>2. Major standardizing organizations (ISO, DIN, ANSI, PN) and their role</li> <li>3. The standard development process: stages and stakeholders</li> <li>4. Types of standards and technical regulations in mechanical engineering</li> <li>5. Standards for material properties and mechanical testing</li> <li>6. Product certification and standard requirements</li> <li>7. Examples of industry-specific standards in various sectors (e.g., ISO 527)</li> <li>8. Technical documentation in accordance with current standards</li> <li>9. Practical application of standards in engineering projects</li> </ol>
Work placement	Not applicable

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