GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Material standards in production processes, PG_00059502						
Field of study	Management and Production Engineering						
Date of commencement of studies	February 2024		Academic year of realisation of subject	2024/2025			
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	2		ECTS credits	3.0			
Learning profile	general academic profile		Assessment form	assessment			
Conducting unit	Zakład Materiałoznawstwa I Technologii Materiałowych -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Krzysztof Krzysztofowicz				
	Teachers						
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	Learning the basics of material classification and standardization regulations						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W01] knows and understands to a greater extent selected issues in the field of management and quality sciences and mechanical engineering, their location in the field of social sciences and engineering and technical sciences, as well as relationships with related disciplines, and sees the possibility of applying the knowledge in practice	has required competences	[SW3] Assessment of knowledge contained in written work and projects
[K7_K01] is aware of the need to expand knowledge and verify the methods of solving problems by consulting experts	is able to search resources	[SK4] Assessment of communication skills, including language correctness
[K7_W03] has an orderly, theoretically founded knowledge related to selected areas of production engineering.	can systematize data	[SW3] Assessment of knowledge contained in written work and projects
[K7_U01] can obtain information from literature, databases and others sources, also in English or another foreign language recognized as the language of international communication in a given engineering discipline; is able to integrate the obtained information, interpret it, as well as draw conclusions and formulate and justify opinions.	is able to get information and prepare raport	[SU5] Assessment of ability to present the results of task
[K7_K05] is able to integrate the possessed knowledge from various scientific disciplines, and in the innovative implementation of engineering tasks also take into account system and non-technical aspects, including ethical ones	has required competences	[SK1] Assessment of group work skills

Subject contents

LECTURE Classification of steel, cast steel, cast iron, non-ferrous metals and their alloys, division into classes and categories. Rules for marking the grades of iron alloys and non-ferrous metal alloys according to Polish and European standards ISO and American AISI, UNS. Semi-finished products and metallurgical products - terminology, forms and classification states, hallmarking, packaging, transport. Steel metallurgical products and non-ferrous metallurgical products - rolled products, forgings, drawn and extruded products, castings, metal powders and sintered products from metal powders. Unification and standardization of marking of steel products. Overview of groups and requirements for metal materials used in various industries: materials for the energy industry conventional and nuclear, materials for marine structures, materials for the automotive industry and aviation, materials for the chemical and petrochemical industries, materials for construction. Recipes specifying acceptance requirements for steel products (standards, regulations of Shipbuilding Companies Classification, UDT regulations). Principles of selecting substitutes for steel and non-ferrous metal alloys.LABORATORY Practical use of regulations and standards specifying requirements for products steelworks. Determining acceptance requirements for rolled, forged and drawn steel products steel castings. Establishing criteria and selecting materials for specific industrial applications automotive, aviation, petrochemical, shipbuilding, nuclear and conventional energy, and construction. Selection of substitutes for steel, cast steel and cast iron according to Polish and foreign standards - exercise with using a computer database.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
laboratory	50.0%	50.0%
colloquim	50.0%	50.0%

Recommended reading

Basic literature

1. Blicharski M.: Inżynieria materiałowa. Stal. WNT Warszawa, 2004
2. Dobrzański L.: Podstawy nauki o materiałach i metaloznawstwo. WNT, Warszawa 2002.
3. Łabanowski J.: Ocena jakości wyrobów hutniczych. Wyd. PWSZ w Elblagu, Elbląg 2008
4. Adamczyk J.: Inżynieria materiałów metalowych, cz I i II. Wyd. Politechniki Śląskiej, Gliwice 2004.

	Supplementary literature	1. Dobrzański L.A.: Materiały inżynierskie i projektowanie materiałowe. WNT, Warszawa, 2005. 2. Normy PN, PN-EN, ISO, ASTM, przepisy UDT. 3. Przepisy Okrętowych Towarzystw Klasyfikacyjnych: PRS, DNV, LR, GL
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Definitions of steel products. Classification rules. UDT regulations. Scope of information about materials contained in the standards.	
Work placement	Not applicable	

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