GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00058882		
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	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 inż. Aleksandra Świerczyńska	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	15.0	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	0.0	0.0	45

Subject objectives

The aim of the course is to familiarize students with advanced methods of materials testing.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W06] possesses organized, profound knowledge necessary for designing and optimization of complex technological processes, modelling and calculations using numerical methods, knows modern manufacturing methods and tools for designing manufacturing processes of machines, devices, their elements and components	Distinguishes research methods. Student knows the principle of implementation, the conditions for conducting and the application of materials testing methods	[SW1] Assessment of factual knowledge
[K7_U01] is able to acquire information from specialist literary sources and other sources regarding the construction and operation of machines and related disciplines in polish and in a foreign language, is able to conduct a self-learning process, is able to synthesize the information, form conclusions and justify opinions	Student understands the challenges related to the development of modern metal testing methods and is able to independently look for solutions to technical problems.	[SU2] Assessment of ability to analyse information
[K7_W11] possesses organized knowledge useful in understanding ex-technical conditioning connected with performing the profession of an engineer and taking it into consideration in engineering practice; possesses well-established knowledge within the range of intellectual property, management and organization of manufacturing processes, including the management and life-cycle of a product	Recognizes the role of an engineer in society.	[SW3] Assessment of knowledge contained in written work and projects

<table>
<tr><td>Subject contents</td><td>Basic concepts in the field of material testing

Quality assurance systems in research

Testing the mechanical properties of materials

Testing of technological properties of materials

Testing of physical properties of materials

Testing of chemical properties of materials

Testing of welded joints

Methods of testing metallic materials

Methods of testing ceramic materials

Methods of testing polymeric materials

Methods of testing composite materials</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Final test</td><td>60.0%</td><td>70.0%</td></tr>
<tr><td>Project</td><td>60.0%</td><td>30.0%</td></tr>
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</td></tr>
<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1.Kubiński, W. (2016). Wybrane metody badań materiałów. PWN, Warszawa. 2.Łabanowski, J. (2012). Ocena jakości wyrobów hutniczych. Wydaw. Państw. Wyższej Szkoły Zawodowej w Elblągu. 3.Dobrzański, L. (2007). Wprowadzenie do nauki o materiałach. Wydaw. Politechniki Śląskiej, Gliwice. 4.Mirski, Z. (2010). Technologia i badanie materiałów inżynierskich. Oficyna Wydawnicza Politechniki Wrocławskiej. 5.Kulik, J., Olszak Kulik, H. (2003) Badanie własności technologicznych metali. Wydawnictwo Uczelniane Politechniki Koszalińskiej.</td></tr>
<tr><td>Supplementary literature</td><td>Standards, articles</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
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</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>List the methods of testing metal/ceramic/polymer/composite materials.

Characterize tests on technological properties.

Compare two methods of testing the physical properties of materials.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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