



Subject card

Subject name and code	, PG_00058882						
Field of study	Mechanical Engineering						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
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_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		
	[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_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			

Subject contents	<p>Basic concepts in the field of material testing</p> <p>Quality assurance systems in research</p> <p>Testing the mechanical properties of materials</p> <p>Testing of technological properties of materials</p> <p>Testing of physical properties of materials</p> <p>Testing of chemical properties of materials</p> <p>Testing of welded joints</p> <p>Methods of testing metallic materials</p> <p>Methods of testing ceramic materials</p> <p>Methods of testing polymeric materials</p> <p>Methods of testing composite materials</p>											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 1025 794 1055">Subject passing criteria</th> <th data-bbox="799 1025 1137 1055">Passing threshold</th> <th data-bbox="1142 1025 1481 1055">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 1061 794 1090">Project</td> <td data-bbox="799 1061 1137 1090">60.0%</td> <td data-bbox="1142 1061 1481 1090">30.0%</td> </tr> <tr> <td data-bbox="456 1097 794 1126">Final test</td> <td data-bbox="799 1097 1137 1126">60.0%</td> <td data-bbox="1142 1097 1481 1126">70.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Project	60.0%	30.0%	Final test	60.0%	70.0%
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Project	60.0%	30.0%										
Final test	60.0%	70.0%										
Recommended reading	<p>Basic literature</p> <p>Supplementary literature</p> <p>eResources addresses</p>	<p>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.</p> <p>Standards, articles</p> <p>Adresy na platformie eNauczenie:</p>										
Example issues/ example questions/ tasks being completed	<p>List the methods of testing metal/ceramic/polymer/composite materials.</p> <p>Characterize tests on technological properties.</p> <p>Compare two methods of testing the physical properties of materials.</p>											
Work placement	Not applicable											