



## 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	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		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	60.0%	30.0%
	Final test	60.0%	70.0%
Recommended reading	Basic literature	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.	
	Supplementary literature	Standards, articles	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	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.		
Work placement	Not applicable		