



## Subject card

Subject name and code	Strength of Materials II, PG_00039810						
Field of study	Materials Engineering, Materials Engineering, Materials Engineering, Materials Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2022/2023		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study 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	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		1.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Oleksii Nosko				
	Teachers		mgr inż. Katarzyna Pytka				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	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	15		1.0		9.0	25
Subject objectives	The aim of the course is to familiarise students with basic mechanical methods of materials testing.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	K6_W06	The student is able to estimate strength properties and technological properties of materials (static tensile test of metals/ static compression test of metals/ static torsion test of metals). The student is able to determine the behaviour of a material subjected to impact loading, is able to determine the Young's modulus of elasticity / Kirchoff's modulus of elasticity, the conventional limit of elasticity and plasticity, is familiar with the method of measurement of deformation of a solid body in the proportional range (Hooke's law). Familiarise oneself with methods of testing hardness of metals (Brinell, Rockwell, Vickers, Shore and Poldi)	[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects
	K6_U08	The student is able to prepare a report on the research carried out in class.	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU5] Assessment of ability to present the results of task
	K6_W05	The student has the ability to analyse basic issues related to the strength of materials, in terms of theory and solving simple tasks and practical problems.	[SW1] Assessment of factual knowledge
	K6_U01	The student will become familiar with the testing machines used for each test and the types of specimens used, as well as knowing how to properly measure the specimens used for testing.	[SU4] Assessment of ability to use methods and tools
Subject contents	The following tests will be carried out in the Materials Strength Laboratory classes: static tensile testing of metals, static compression testing of metals, impact testing of metals, dynamic tensile testing of metals, static torsion testing of metals, strain testing using resistance strain gauges, hardness testing of metals.		
Prerequisites and co-requisites	Students should have knowledge of mathematics, mechanics and basic knowledge of the general properties of metals.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		56.0%	30.0%
		56.0%	20.0%
		56.0%	50.0%
Recommended reading	Basic literature	Wojnicz W., Wittbrodt E.: Mechanical testing methods for materials, Wydawnictwo Politechniki Gdańskiej, Gdańsk 2020.	
	Supplementary literature	Boruszak A., Sygulski R., Wrześniowski K.: Strength of materials: experimental testing methods, Wydawnictwo Politechniki Poznańskiej, Poznań 1984.  Katarzyński S., Kocańda S., Zakrzewski M.: Testing of mechanical properties of metals, WNT, Warszawa 1967.	
	eResources addresses	Adresy na platformie eNauczanie:	
	Example issues/ example questions/ tasks being completed		
Work placement	Not applicable		