GDAŃSK UNIVERSITY OF TECHNOLOGY

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