

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

	Strength of Motorials DC 00059792								
Subject name and code	Strength of Materials, PG_00058782								
Field of study	Environmental Engineering								
Date of commencement of studies	October 2022		Academic year of realisation of subject			2023/2024			
Education level	first-cycle studies		Subject group			Obligatory subject group in the field of study			
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			exam			
Conducting unit	Department of Structural Mechanics -> Faculty of Civil and Environmental Engineering								
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Violetta Konopińska-Zmysłowska							
	Teachers		dr hab. inż. Violetta Konopińska-Zmysłowska dr inż. Magdalena Oziębło						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	t	Seminar	SUM	
	Number of study hours	15.0	30.0	0.0	0.0		0.0	45	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	n didactic ed in study	Participation in consultation hours		Self-study		SUM	
	Number of study hours	45		7.0		48.0		100	
Subject objectives	Student is able to calculate internal forces for simple model of engineering structures and use them to developed stresses in investigated model. Student has knowledge of theoretical basis of dimensioning.								
Learning outcomes	Course out	Subject outcome			Method of verification				
	[K6_W02] has knowledge of physics, including mechanics, thermodynamics, optics, electricity and magnetism, nuclear physics and solid state physics, including knowledge necessary to: 1) understand the basic physical phenomena related to material durability, fluid mechanics and hydraulics, building physics, geodetic measurements; 2) understanding the principles of operation of basic electrical devices and systems; 3) solving project tasks of the sanitary industry;		Student has basic knowledge of simple engineering structures. Student knows basic types of loads of structures and is able to prepare static schemes of basic structures.			[SW1] Assessment of factual knowledge			
	[K6_W08] has elementary knowledge of construction: including building materials, their strength, construction mechanics and building physics, moisture migration in buildings, heat transfer through building partitions		Student is able to obtain stress function of beams cross section. Student has basic knowledge of dimensioning of simple structures.			ISW1] Assessment of factual knowledge			
Subject contents	Strength of materials postulates. Three dimensional stress state. Plane stress state. Axial tension and compression. Inertia moments. Simple bending. Unsymmetrical bending. Eccentric compression and tension. Core of cross section. Bending line of beam Euler method. Bending line of beam Mohr method. Stability. Free torsion.								
Prerequisites and co-requisites	Rudiments of vector algebra and analysis, differential and integral calculus.								
Assessment methods and criteria	Subject passing criteria		Pass	Passing threshold			Percentage of the final grade		
	Written exam		60.0%			100.0%			

Recommended reading	Basic literature	Gere J.M., Timoshenko S.: <i>Mechanics of Materials</i> , PWS-Kent Publishing Company, Boston, 1984				
	Supplementary literature	Willems N., Easley T.J., Rolfe S.T.: Strength of Materials, McGraw-Hill Book Company, 1981				
	eResources addresses	Adresy na platformie eNauczanie:				
		Mechanika Ogólna i Wytrzymałość Materiałów rok 2023 Kierunek Inżynieria Środowiska - Moodle ID: 29076 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29076				
Example issues/ example questions/ tasks being completed	Calculate the shortening of the compressed column.					
	Determine the stresses in the tension rod.					
	Calculate extreme stresses of simple beam.					
	Calculate the bending line of simple beam.					
Work placement	Not applicable					

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