



Subject card

Subject name and code	, PG_00069306						
Field of study	Mechanika materiałów A						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group		Optional subject group		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	4		Language of instruction		Polish non		
Semester of study	7		ECTS credits		1.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Mechanics of Materials and Structures -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Jacek Chróścielewski				
	Teachers		prof. dr hab. inż. Jacek Chróścielewski prof. dr hab. inż. Magdalena Rucka				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	5.0	0.0	20
	E-learning hours included: 0.0						
	eNauczanie source addresses: Moodle ID: 2230 Mechanika Materiałów https://enauczanie.pg.edu.pl/2025/course/view.php?id=2230						
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	20		0.0		0.0	20
Subject objectives	Determining the influence of time and environment on the strength properties of materials. Discussing the concepts of creep, relaxation and fatigue. Discussing fracture. Understanding materials such as composites and auxetics.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W06] Demonstrates practical knowledge and understanding of materials, devices and tools, processes and technologies in the field of civil engineering (and their limitations).	The student has theoretical and practical knowledge of materials used in the construction industry, understands their properties, and is able to determine them.	[SW1] Ocena wiedzy faktograficznej
	[K6_U07] Design and build engineering structures in a sustainable manner, with care for the natural environment and a minimum carbon footprint	The student is able to design building structures made of various building materials, knows their properties and impact on the natural environment.	[SU1] Ocena realizacji zadania
	[K6_U06] Conduct engineering activities in civil engineering subject area, using and applying practical knowledge and understanding of materials, equipment and tools, processes and technologies.	The student solves design tasks and problems. He or she is able to prepare a report on the activities performed, such as calculations or design tasks.	[SU1] Ocena realizacji zadania
	[K6_K01] Is aware of the key aspects of professional, ethical and social responsibility related to management, business operation, decision making and opinion formulation in civil engineering.	The student has knowledge of professional, ethical and social responsibility related to activities in the construction industry	[SK3] Ocena umiejętności organizacji pracy [SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce
	[K6_W07] Understand the investment's impact on the environment and the interrelationships and dependencies between the building structure and the natural environment	The student has knowledge of the impact of materials used in the investment process on the environment	[SW1] Ocena wiedzy faktograficznej
Subject contents	Course content – lecture The influence of time and environment on the strength properties of materials. Selected issues related to creep and relaxation. Selected issues related to fracture. Selected issues related to the stability of frame elements. Selected issues related to modern materials, such as composites and auxetics. Course content – project Study of material properties taking into account rheological effects		
Prerequisites and co-requisites	Basic knowledge of: - structural mechanics - strength of materials - experimental methods in the strength of materials		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	laboratory	60.0%	20.0%
	test	60.0%	80.0%
Recommended reading	Basic literature	Bielewicz E.: Wytrzymałość materiałów. Politechnika Gdańska, Gdańsk 1968, 1972, 1977, 1980, 1984, 2001, 2006. Dyląg Z., Jakubowicz A., Orłowski W.: Wytrzymałość materiałów, tom I, Wydawnictwa Naukowo-Techniczne, 2003. Dyląg Z., Jakubowicz A., Orłowski W.: Wytrzymałość materiałów, tom II, Wydawnictwa Naukowo-Techniczne, 2003. Chróścielewski J.: Materiały pomocnicze do wykładu z Mechaniki Materiałów (na portalu eNauczanie).	
	Supplementary literature	Jastrzębski P., Mutermilch J., Orłowski W.: Wytrzymałość materiałów. Arkady, Warszawa 1974.	
	eResources addresses		

Example issues/ example questions/ tasks being completed	A design task involving the design, production and testing of a sample made of a selected material
Practical activities within the subject	Not applicable

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