GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Fundamentals of Construction, PG_00069942						
Field of study	Real Estate 5.0						
Date of commencement of studies	February 2026		Academic year of realisation of subject	2025/2026			
Education level	second-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	1		Language of instruction	Polish			
Semester of study	1		ECTS credits	3.0			
Learning profile	general academic profile		Assessment form	exam			
Conducting unit	Department of Engineering Structures -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Ewelina Korol				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	0.0	0.0	60
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=5100						
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	60		2.0	13.0	75	
Subject objectives	The objective of this course is to provide advanced technical knowledge and practical skills essential for the accurate valuation, management, and trade of real estate. Students learn to independently interpret building regulations and efficiently utilize technical documentation within investment processes. Furthermore, the course prepares students to reliably assess the depreciation of buildings, plan renovation and maintenance works, and professionally prepare construction cost estimates						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U03] is able to independently interpret and apply the provisions of construction law, efficiently use documentation related to the investment process, assess the degree of physical depreciation of buildings and structures, identify maintenance and repair needs of buildings and installations, develop renovation plans, and perform cost estimation tasks	Familiar with building regulations and technical standards. Knowledgeable about architectural and construction administration authorities and administrative procedures. Capable of reading technical documentation. Understands building placement rules and can calculate building footprint, usable floor area, and volume. Understands the building life cycle and technical inspection principles. Accurately determines technical wear and tear and replacement costs. Skilled in planning renovations and modernizations while optimizing costs.	[SU3] Assessment of ability to use knowledge gained from the subject
[K7_W03] possesses advanced knowledge and understanding of selected issues in the field of technical fundamentals essential for real estate valuation, property management, real estate brokerage, and other processes characteristic of the functioning of the real estate market.	Distinguishes between popular building construction technologies —such as traditional masonry, industrialized large-panel systems, and mixed methods—and is familiar with structural systems, including wall-slab, column-slab, frame, and shell structures. Capable of identifying specific structural elements of a building, such as slabs, walls, lintels, and foundations, and possesses knowledge of construction and finishing materials. Furthermore, understands the fundamental operating principles of water, sewage, electrical, and gas networks, as well as modern renewable energy systems (RES).	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects

Subject contents

Course content – lecture

- Legal and technical requirements for the operation of buildings: an overview of key provisions of the Construction Law and the 2002 Regulation of the Minister of Infrastructure on the technical requirements for buildings and their location.
- Overview of construction technologies: characteristics of common building construction technologies, discussion of various structural systems and structural elements; stages of building construction from the foundation to the developers finish; construction and finishing materials; building services.
- Investment processes in construction: pre-design, design, preparatory, construction, maintenance, and demolition of a building.
- Assessment of the technical condition and functional wear and tear of a building.

Course content – exercises

Architectural design of a multi-family building, including structural elements and systems: plumbing, heating (central heating), electrical, and ventilation. Selection of the structural layout of walls (longitudinal/transverse, mixed, bidirectional) for a given type of floor (beam, ribbed, precast slab, and monolithic). Layout of residential units in accordance with applicable requirements regarding minimum usable floor area, window area, sound insulation, width of escape routes, etc.

Prerequisites and co-requisites

The ability to use graphics software like AutoCad

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Exam	60.0%	50.0%
design	60.0%	50.0%

Recommended reading

Basic literature	• USTAWA z dnia 7 lipca 1994 r. Prawo budowlane • Rozporządzenie Ministra Infrastruktury z dnia 12 kwietnia 2002 r. w sprawie warunków technicznych, jakim powinny odpowiadać budynki i ich usytuowanie • Nowy poradnik majstra budowlanego • Neufert. Podręcznik projektowania architektoniczno-budowlanego
Supplementary literature	Presentations share on the Enauczanie website
eResources addresses	

Example issues/ example questions/ tasks being completed	• List the participants in the construction and investment process • Provide the most important information contained in the local zoning plan • Classify buildings based on their height and number of stories • Describe the method for calculating the usable floor area of an attic • List the basic structural elements of a frame structure • List the managers responsibilities regarding the operation of a building • List the scope and frequency of technical inspections of a building
Practical activites within the subject	Not applicable

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