



Subject card

Subject name and code	, PG_00069210						
Field of study	Niezwykłe konstrukcje budowlane i inżynierskie						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		5.0		
Learning profile	general academic profile		Assessment form		assessment		
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. Marcin Abramski				
	Teachers		dr hab. inż. Marcin Abramski dr inż. Dariusz Kowalski dr inż. Paweł Piotrkowski				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	30.0	0.0	0.0	0.0	45
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=2175						
	Moodle ID: 2175 Niezwykłe konstrukcje budowlane i inżynierskie https://enauczanie.pg.edu.pl/2025/course/view.php?id=2175						
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	45		10.0		70.0	125
Subject objectives	To stimulate the interest of students participating in the course in the subject of building and bridge structures. Presenting a variety of structural solutions used in buildings and bridges.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_K03] Can effectively, clearly and unambiguously convey information, describe activities and communicate their results/ outcomes to engineers or a wider audience using appropriate communication methods and tools.		An analysis of a given building or bridge structure for possible alternative designs that would fulfill the same function. Presenting the results of the study to the entire student group.		[SK1] Ocena umiejętności pracy w grupie [SK4] Ocena umiejętności komunikacji, w tym poprawności językowej		
	[K6_K04] Engages in independent lifelong learning and individually follows the development of science and technology in the field of civil engineering.		A review of the literature on a selected non-standard building or bridge. A simple static analysis of the structure.		[SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce [SK3] Ocena umiejętności organizacji pracy [SK2] Ocena postępów pracy		

Subject contents	Course content – lecture Selected unconventional building and bridge structures from Poland and around the world, made of concrete and/or steel. Non-standard structural systems (e.g. arches, cable structures). Unconventional structural solutions (e.g. reinforced concrete joints, supports subject to tensile forces). Course content – exercises 1. 1. Excursions to interesting buildings and bridges in Gdańsk (e.g., the Forum shopping center, Polsat Plus Arena Gdańsk stadium, and the John Paul II cable-stayed bridge over the Martwa Wisła River) to discuss the structural systems used and view non-standard structural details. 2. 2. Review of literature on a selected or assigned unconventional building or bridge. Analyzing the influence of the construction period, location, and the designer's individual concept on the structure of the building/bridge. Solving a given design problem related to the selected building/bridge using a computer program (e.g., Robot), using a simple two-dimensional numerical model with only bar elements. Presentation of the results using a multimedia projector to the entire student group. Exercises are performed in groups.								
Prerequisites and co-requisites									
Assessment methods and criteria	<table><tr><td>Subject passing criteria</td><td>Passing threshold</td><td>Percentage of the final grade</td></tr><tr><td></td><td>60.0%</td><td>100.0%</td></tr></table>	Subject passing criteria	Passing threshold	Percentage of the final grade		60.0%	100.0%		
Subject passing criteria	Passing threshold	Percentage of the final grade							
	60.0%	100.0%							
Recommended reading	Basic literature	Albums with construction drawings of non-standard buildings or bridges, e.g.: 1. Filipiuk Stefan: Mosty łukowe Transprojektu Gdańskiego. Transprojekt Gdański, Gdańsk 2010. 2. Machelski Cz., Lewandowski M.: Nawisowy most przez rzekę Odrę w ciągu południowej obwodnicy Kędzierzyna Koźla. Dolnośląskie Wydawnictwo Edukacyjne. Wrocław, 2011.							
	Supplementary literature	Construction drawings and technical specifications of non-standard buildings or bridges, obtained e.g. from the Internet.							
	eResources addresses	Basic https://mosty.pk.edu.pl/images/E1e3/Mosty_Lukowe_Transprojekt_Gdansk.pdf -							
Example issues/ example questions/ tasks being completed									
Practical activities within the subject	Not applicable								

Document generated electronically. Does not require a seal or signature.