GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00069282						
Field of study	Konstrukcje betonowe III - projekt zaawansowany						
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	2.0			
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 inż. Małgorzata Lachowicz				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	30.0	0.0	30
	E-learning hours included: 0.0						
	eNauczanie source addresses: Moodle ID: 1787 Konstrukcje betonowe III https://enauczanie.pg.edu.pl/2025/course/view.php?id=1787						
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	30		2.0		18.0	50
Subject objectives	The student is able to design reinforced concrete stairs, a bidirectionally bent slab and a bidirectionally bent column, including preparing reinforcement drawings.						

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 is able to prepare a reinforcement drawing for a designed reinforced concrete element.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym
[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 is able to design a reinforced concrete element working in two directions in accordance with the guidelines of design standards.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym
[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 a reinforced concrete element working in two directions by economically selecting concrete cross-sections and reinforcement.	[SU4] Ocena umiejętności korzystania z metod i narzędzi
[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 has the ability to use computer programs and estimate the correctness of the obtained results.	[SU4] Ocena umiejętności korzystania z metod i narzędzi
[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 makes independent design decisions and selects optimal construction solutions.	[SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce

Subject contents

Course content – project
Present the principles of determining internal forces using the table method for single- and multi-field cross-reinforced slabs. Compare the obtained results with computer methods. Present issues relevant to the design and shaping of reinforcement in slabs supported by beams working in two directions. Understand the principles of load transfer from cross-reinforced slabs to supporting beams. Present procedures for determining the load-bearing capacity of reinforced concrete columns and the principles of calculating elements subjected to biaxial eccentric compression. Present the principles of reinforcement shaping and design problems in reinforced concrete stairs.

Prerequisites and co-requisites

The student is able to design bending cross-sections working in one direction and unidirectional reinforced concrete elements under eccentric compression.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
	60.0%	100.0%

Recommended reading	Basic literature	J. Kobiak, W. Stachurski, Konstrukcje żelbetowe. Arkady, Warszawa 1987. (możliwe inne wydania). M. Knauff, Obliczanie konstrukcji żelbetowych według Eurokodu 2. PWN, Warszawa 2012. M. Knauff i inni,, Tablice i wzory do projektowania konstrukcji żelbetowych z przykładami obliczeń. PWN, Warsawa 2013. J. Pędziwiatr, Projektowanie słupów żelbetowych. PWN, Warszawa 2019. A. Łapko, B. Ch. Jensen, Podstawy projektowania i algorytmy obliczeń konstrukcji żelbetowych. Arkady, Warszawa 2006. W. Starosolski.Konstrukcje żelbetowe według Eurokodu 2 i norm związanych. PWN, Warszawa 2011. Konstrukcje żelbetowe : atlas rysunków / red. nauk. Adam Zybura ; [aut. Katarzyna Domagała et al.]. PWN, Warszawa 2009.
	Supplementary literature	Podstawy projektowania konstrukcji żelbetowych i sprężonych według Eurokodu 2, praca zbiorowa. Dolnośląskie Wydawnictwo Edukacyjne, Wrocław 2006.Dół formularza
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Practical activites within the subject	Not applicable	

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