

## 。 GDAŃSK UNIVERSITY OF TECHNOLOGY

## Subject card

Subject name and code	Concrete Engineering Structures, PG_00042241								
Field of study	Civil Engineering								
Date of commencement of studies	February 2024		Academic year of realisation of subject			2024/2025			
Education level	second-cycle studies		Subject group			Optional subject group 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	2		ECTS credits			3.0			
Learning profile	general academic profile		Assessment form			exam			
Conducting unit	Department of Concrete Structures -> Faculty of Civil and Environmental Engineering								
Name and surname	Subject supervisor	ect supervisor dr inż. Marek Wesołowski							
of lecturer (lecturers)	Teachers		dr inż. Małgorzata Lachowicz mgr inż. Maciej Solarczyk						
			dr inż. Marek	Wesołowski					
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	30.0	0.0	15.0	15.0		0.0	60	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	ning activity Participation in d classes included plan		didactic Participation in consultation hours		Self-study SUM			
	Number of study 60 hours			5.0		10.0		75	
Subject objectives	Design the prestressed elements in critical conditions and all load conditions.								
Learning outcomes	Course outcome		Subject outcome			Method of verification			
	[K7_W15] has deep and adequate knowlege of civil engineering, within offered specialization and profile		Student designs the prestressed elements in critical conditions and all load conditions. Student explains structure solutions applied in constructions.			[SW1] Assessment of factual knowledge			
	[K7_K01] is aware of necessity of professional competences improvement; obeys the professional ethics code		Student designs the prestressed elements in critical conditions and all load conditions. Student explains structure solutions applied in constructions.			[SK4] Assessment of communication skills, including language correctness			
	[K7_U02] can design and dimension complex steel, concrete (including reinforced), wood and masonry construtions and its details		Student designs the prestressed elements in critical conditions and all load conditions. Student explains structure solutions applied in constructions.			[SU4] Assessment of ability to use methods and tools			
	[K7_W02] knows principles of analysis, design and dimensioning of complex constructions and its elements		Student designs the prestressed elements in critical conditions and all load conditions. Student explains structure solutions applied in constructions.			[SW1] Assessment of factual knowledge			
Subject contents	Review of basic information of prestressed concrete structures: structure classification, prestress technics and prestress force loss estimation. Ultimate limit states and servicability limit states of prestressed structures during construction and maintenance. Composite structures. Statically undetermined prestressed structures: prestressed beam of double and triple span. Arch roofs (the economical beams).								
Prerequisites and co-requisites	No requirements								

Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade				
and criteria	Laboratory	50.0%	10.0%				
	Written exam	50.0%	60.0%				
	Project	50.0%	30.0%				
Recommended reading	Basic literature	A.Ajdukiewicz J.Mames, <i>Betonowe konstrukcje sprężone</i> , Wydawnictwo Politechniki Śląskiej, Gliwice 2001					
		A.Ajdukiewicz J.Mames, <i>Konstrukcje z betonu sprężonego</i> , Polski Cement, Kraków 2004					
		T.Godycki-Ćwirko, A.Czkwianianc, <i>Konstrukcje sprężone</i> , Politechnika Łódzka 1984					
		Z.A.Zieliński, <i>Prefabrykowane betonowe dźwigary sprężone</i> , Arkady, Warszawa 1962					
	Supplementary literature	W.Olszak i in., <i>Teoria konstrukcji sprężonych</i> , PWN, Warszawa 1961					
		S.Kaufman i in., <i>Konstrukcje sprężone</i> , Monografia: Budownictwo Betonowe, t.III, Arkady, Warszawa 1962					
		Konstrukcje betonowe, żelbetowe i sprężone. Komentarz naukowy do normy PN-B-03264, ITB, Warszawa 2005					
		F.Leonhardt, <i>Spannbeton fur die Praxis</i> , Ernst & Sohn Verlag, Berlin 1973					
	eResources addresses	Adresy na platformie eNauczanie:					
		Konstrukcje sprężone 2024 - Moodle ID: 40884 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=40884					
Example issues/ example questions/ tasks being completed							
Work placement	Not applicable						

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