



## Subject card

Subject name and code	Concrete Structures, PG_00048227						
Field of study	Civil Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2023/2024		
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	Part-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Concrete Structures -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor						
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	10.0	0.0	10.0	0.0	20
	E-learning hours included: 0.0						
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	5.0		25.0		50
Subject objectives	The aim of the course is to familiarize students with the principles of designing and spatial dimensioning of buildings. As part of the course, students for a given type of building structure (building element) perform static calculations (numerical, analytical), make dimensions of the main structural elements and prepare construction drawings of the designed elements.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_U01] can evaluate and list any loads acting on constructions						
	[K7_W02] knows principles of analysis, design and dimensioning of complex constructions and its elements						
	[K7_W04] has knowledge on advanced strength of materials, modeling and optimisation of materials and constructions; has knowledge of fundamentals of Finite Element Method and general nonlinear analysis of engineering constructions and systems						
	[K7_K01] is aware of necessity of professional competences improvement; obeys the professional ethics code						
Subject contents	The course includes classes in the following areas: construction and execution of reinforcement in reinforced concrete elements, structural conditions of reinforcement of elements, designing tanks for liquids, errors in anchoring in construction, designing airport pavement structures, frost resistance of concrete pavements, designing and dimensioning of protective barriers and barrier rails, expansion joints in concrete pavements.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Design task		60.0%		100.0%		

Recommended reading	Basic literature	<p>A.Ajdukiewicz J.Mames: Konstrukcje z betonu sprężonego, Polski Cement, Kraków 2004</p> <p>T.Godycki-Ćwirko, A.Czkwianianc: Konstrukcje sprężone, Politechnika Łódzka 1984</p> <p>J.Kobiak W. Stachurski: Konstrukcje żelbetowe, t.2,t.4 Arkady 1991</p> <p>W.Starosolski: Konstrukcje żelbetowe, t1, PWN, Warszawa 2010</p> <p>A.Halicka, D.Franczak: Projektowanie zbiorników żelbetowych, PWN, Warszawa 2011</p> <p>K.Grabiec: Żelbetowe konstrukcje cienkościenne PWN 1999</p>
	Supplementary literature	<p>A. Ambroziak, P.Kłowski: Autodesk Robot Structural Analysis podstawy obliczeń. Wydawnictwo Politechniki Gdańskiej, Gdańsk 2010.</p> <p>A. Ambroziak, P.Kłowski: Autodesk Robot Structural Analysis. Wymiarowanie konstrukcji stalowych i żelbetowych - przykłady obliczeń. Wydawnictwo Politechniki Gdańskiej, Gdańsk 2014.</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	