



Subject card

Subject name and code	, PG_00070572						
Field of study	Civil Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2025/2026		
Education level	first-cycle studies	Subject group			Optional 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	8	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	mgr inż. Maciej Malinowski					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	15.0	0.0	30
	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	30		0.0		0.0	30
Subject objectives	<ul style="list-style-type: none">• acquainted with basic principles of designing, shaping, calculation of bridge structures of various types,• acquainted with basic information of building of bridges,• acquainted with basic methods of diagnosis of bridges,• acquainted with basic principles of designing, shaping, calculation of bridge structures using the examples of a plate girder railway bridge						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U05] Conducts research (obtaining information, simulations, experimental methods) in the field of construction in order to solve specific tasks and report research results.	Conducts research (information acquisition, simulations) in the field of bridge construction in order to solve specific tasks and report research results.	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task
	[K6_W03] Demonstrate knowledge and understanding of the processes, established standards and design methods in the civil engineering subject area and of their limitations.	Demonstrates knowledge and understanding of the processes and established standards and design methods for bridge construction and is aware of their limitations.	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects
	[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.	Is aware of the key aspects of professional, ethical and social responsibility related to management, conducting business, making decisions and formulating opinions in bridge construction.	[SK2] Assessment of progress of work [SK1] Assessment of group work skills [SK3] Assessment of ability to organize work [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice
	[K6_K04] Engages in independent lifelong learning and individually follows the development of science and technology in the field of civil engineering.	Engages in independent lifelong learning and independently tracks developments in science and technology in the field of civil engineering and bridge construction	[SK2] Assessment of progress of work [SK3] Assessment of ability to organize work [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice
	[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.	Is able to 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.	[SK2] Assessment of progress of work [SK3] Assessment of ability to organize work [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice
Subject contents	<p>Course content – lecture</p> <ul style="list-style-type: none"> - Construction, shaping, and dimensioning of truss, arch, frame, beam, cable-stayed, and suspended bridge structures. - Elements of bridge construction technology. - Elements of bridge diagnostics. <hr/> <p>Course content – project</p> <p>Design of a plate girder railway bridge with an open roadway (dimensioning, construction drawings)</p>		
Prerequisites and co-requisites	<p>Structural Statics</p> <p>Strength of Materials</p> <p>Basic Information on Bridge Structures</p>		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	lecture	60.0%	50.0%
	project	80.0%	50.0%

Recommended reading	Basic literature	M. Malinowski - Materials for Bridge Design - Open-Road Plate Girder Railway Bridge - Electronic Version M. Malinowski - Lectures on Metal Bridges I Course - Electronic Version
	Supplementary literature	Ryżyński A., Wołowicki W., Skarżewski J., Karlikowski J.: Mosty stalowe, PWN, Warszawa Poznań, 1984. Karlikowski J., Sturzbecher K.: Mosty stalowe. Mosty belkowe i zespolone. Przewodnik do ćwiczeń projektowych Politechnika Poznańska, Poznań, 2003. Karlikowski J., Madaj A., Wołowicki W.: Mostowe konstrukcje zespolone stalowo-betonowe. WKŁ, Warszawa 2007r. Czudek H.: Podstawy mostownictwa metalowego, Politechnika Warszawska, Warszawa, 1997. Hydzik J.: Mosty kolejowe, WKŁ, Warszawa, 1986. Danielski L.: Mosty metalowe, Politechnika Wroclawska, Wroclaw, 1983. Cholewo J., Sznurowski M.: Mosty kolejowe i fundamentowanie ,WKŁ, Warszawa, 1965. Korelewski J.: Mosty stalowe, Politechnika Krakowska, Kraków, 1980. Szelągowski F.: Mosty metalowe, WKŁ, Warszawa, 1966. Pszernicki A.: Mosty stalowe nitowane, Wydawnictwa Komunikacyjne, Warszawa, 1954. Madaj A., Wołowicki W.: Budowa i utrzymanie mostów. WKiŁ, Warszawa 1995. Furtak K.: Mosty Zespolone. PWN, Warszawa 1999. Siwowski T.: Projektowanie mostów według Eurokodów. Elamed 2016. Siwowski T.: Zastosowanie Eurokodów w projektowaniu mostów. Oficyna Wydawnicza Politechniki Rzeszowskiej, 2016. Siwowski T., Turoń B.: Projektowanie mostów zespolonych według Eurokodu 4. Oficyna Wydawnicza Politechniki Rzeszowskiej, 2016. Karlikowski J., Madaj A., Wołowicki W.: Mosty zespolone stalowo-betonowe. Zasady projektowania wg PN-EN 1994-2. WKŁ 2016. Machelski Cz.: Ruchome obciążenia obiektów mostowych. Dolnośląskie Wydawnictwo Edukacyjne 2015.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Practical activities within the subject	Not applicable	

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