



Subject card

Subject name and code	Bridges and Tunnels, PG_00048197						
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				
Mode of study	Part-time studies		Mode of delivery		at the university		
Year of study	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		6.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Engineering Structures -> Faculty of Civil and Environmental Engineering -> Wydział Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		mgr inż. Maciej Malinowski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	20.0	0.0	0.0	20.0	0.0	40
	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	40		5.0		105.0	150
Subject objectives	- acquainted with basic principles of designing, shaping, calculation of bridge structures, - acquainted with basin informations of building of bridges, - acquainted with basic methods of diagnosis of brridges,						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
Subject contents	Subject contents Lecture: 1. Basic information about bridges, definitions. 2. Classification of bridge structures. 3. History of bridges. 4. Catastrophes of bridges. 5. Loads and interactions. 6. Basic information about beam, plate, frame, arch, truss, suspension, cable-stayed, movable bridges and footbridges. 7. Basic information about foundation, supports and bridge equipment. 8. Bridge building technology. 9. Basic information about tunnels and culverts. 10. Diagnostics of bridge structures. Designing: Project of a beam railway bridge with an open road						
Prerequisites and co-requisites	Strength of materials. Building mechanics.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	lectures		51.0%		50.0%		
	projects		80.0%		50.0%		
Recommended reading	Basic literature		1. Malinowski M, Banaś A., Wasilewski B., Materiały do wykładu z Mostów i Tuneli electronic version platform: eNauczanie.. 2. Malinowski M, Szafrąński M., Materiały pomocnicze do projektowania mostów metalowych #1 electronic version platform: eNauczanie..				

	Supplementary literature	1. Ryżyński A., Wołowicki W., Skarżewski J., Karlikowski J.: Mosty stalowe, PWN, Warszawa Poznań, 1984. 2. Szczygiel J.: Mosty z betonu zbrojonego i sprężonego. WKiŁ, Warszawa 1974 (1972). 3. Karlikowski J., Sturzbecher K.: Mosty stalowe. Mosty belkowe i zespolone. Przewodnik do ćwiczeń projektowych Politechnika Poznańska, Poznań, 2003. 4. Karlikowski J., Madaj A., Wołowicki W.: Mostowe konstrukcje zespolone stalowo-betonowe. WKŁ, Warszawa 2007r. 5. Czudek H.: Podstawy mostownictwa metalowego, Politechnika Warszawska, Warszawa, 1997. 6. Hydzik J.: Mosty kolejowe, WKŁ, Warszawa, 1986. 7. Danielski L.: Mosty metalowe, Politechnika Wrocławska, Wrocław, 1983. 8. Cholewo J., Sznurowski M.: Mosty kolejowe i fundamentowanie, WKŁ, Warszawa, 1965. 9. Korelewski J.: Mosty stalowe, Politechnika Krakowska, Kraków, 1980. 10. Szelągowski F.: Mosty metalowe, WKŁ, Warszawa, 1966. 11. Pszenicki A.: Mosty stalowe nitowane, Wydawnictwa Komunikacyjne, Warszawa, 1954. 12. Leonhardt F.: Podstawy budowy mostów betonowych. WKiŁ, Warszawa 1982. 13. Madaj A., Wołowicki W.: Mosty betonowe. WKiŁ, Warszawa 1998. 14. Madaj A., Wołowicki W.: Budowa i utrzymanie mostów. WKiŁ, Warszawa 1995. 15. Furtak K.: Mosty Zespolone. PWN, Warszawa 1999. 16. Siwowski T.: Projektowanie mostów według Eurokodów. Elamed 2016. 17. Siwowski T.: Zastosowanie Eurokodów w projektowaniu mostów. Oficyna Wydawnicza Politechniki Rzeszowskiej, 2016. 18. Siwowski T., Turoń B.: Projektowanie mostów zespolonych według Eurokodu 4. Oficyna Wydawnicza Politechniki Rzeszowskiej, 2016. 19. Karlikowski J., Madaj A., Wołowicki W.: Mosty zespolone stalowo-betonowe. Zasady projektowania wg PN-EN 1994-2. WKŁ 2016. 20. Machelski Cz.: Ruchome obciążenia obiektów mostowych. Dolnośląskie Wydawnictwo Edukacyjne 2015.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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