



## Subject card

Subject name and code	, PG_00062234						
Field of study	Civil Engineering						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies	Subject group					
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			assessment		
Conducting unit	Department of Engineering Structures -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Arkadiusz Sitarski					
	Teachers	dr inż. Arkadiusz Sitarski dr hab. inż. Marcin Abramski dr inż. Anna Banaś mgr inż. Maciej Malinowski					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	0.0	0.0	45
	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	45	0.0		0.0		45
Subject objectives	• learning techniques and technology of building bridges						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_U06] is able to choose proper tools (measuring, analytical or numerical) to solve engineering problems, to acquire, filtrate, proces and analyse data	The student is able to recognize the type of bridge structure and will analyze the possibilities of its creation in terms of construction and calculations			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
	[K7_W13] has knowledge on state of the art methods on knowledge acquisition, filtration, processing and analysis	The student is able and partially knows the programs for computer model analysis, including analysis of bridge construction conditions.			[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation		
Subject contents	Contemporary methods of concrete bridges erection. Classification of constructing technology, choice criteria. Precasting. Scaffolding and shuttering construction. System scaffolding. Steel bridges. Classification by materials, construction type (cross- sections). Choice of static scheme, choice criteria. Technical and economical characteristics of construction methods. Methods of bridge structures fabrication. Laying out, cutting, welding of large size elements. Assembly methods (traditional and large-size). Possibilities and choice criteria. Bridge equipment and its influence on structure durability.						
Prerequisites and co-requisites	Subject: Bridges and Tunnels						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Midterm colloquium	60.0%			50.0%		
	Project tutorials	60.0%			50.0%		

Recommended reading	Basic literature	<p>1. Głomb J.: Technologia budowy mostów betonowych. WKiŁ, Warszawa 1982.</p> <p>2. Madaj A., Wołowicki W.: Budowa i utrzymanie mostów. WKiŁ, Warszawa 1995.</p> <p>3. Leonhardt F.: Budowa mostów. WKiŁ, Warszawa 1982</p>
	Supplementary literature	<p>1. Praca zbiorowa: Zagadnienia budowy współczesnych mostów betonowych. Biblioteka Drogownictwa, WKiŁ, Warszawa 1982</p> <p>2. Praca zbiorowa: Podpory mostów. Wybrane zagadnienia. Biblioteka Drogownictwa, WKiŁ, Warszawa 1981</p> <p>3. Ryżyński A., Wołowicki W., Skarżewski J., Karlikowski J.: Mosty Stalowe. PWN, Warszawa-Poznań 1984.</p> <p>4. Danielski L.: Most Metalowe. Politechnika Wrocławska. Wrocław 1983.</p> <p>5. Wolff M.: Rusztowania i deskowania mostowe. WKiŁ, Warszawa 1964.</p> <p>6. Barzykowski W., Derecki J., Feder A., Janczewski L., Jarominiak A., Pierożyński M.: Mechanizacja Budowy Mostów. WKiŁ, Warszawa 1971.</p> <p>7. Kędziński B.: Postęp techniczny w mostownictwie. WKiŁ, Warszawa 1972</p> <p>8. Langrock J., Schuchardt J., Verch W.: Betonbrückenbau. VEB Verlag für Bauwesen, Berlin 1979</p>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> <li>• Technologies for building small bridges</li> <li>• Technologies for building continuous concrete bridges.</li> <li>• Analysis of the assembly phase of selected bridge structure</li> </ul>	
Work placement	Not applicable	