GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Civil engineering buildings in transportation, PG_00044661		
Field of study	Transport		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2024/2025
Education level	first-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	3	Language of instruction	Polish
Semester of study	6	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Railway Engineering -> 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	30.0	15.0	0.0	15.0	0.0	60

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	60	5.0	35.0	100

Subject objectives

Basic knowledge on designing and dimensioning of bridge structures

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U13] able to select tools and methods, carry out assessments and simple tests of transport infrastructure and means of transport to an extent required of the specialty / learning profile	The student is able to identify construction elements, way of carrying loads and has a basic understanding of the principles of dimensioning and designing bridges.	
[K6_W18] has proficiency in transport infrastructure as appropriate for their specialty	The student is able to define the basic concepts of engineering structures in transport, lists the types of bridges and tunnels, can name the elements of equipment.	

Subject contents

Engineering objects - basic definitions and materials. Materials for building bridges. Static schemes of bridges - beam, plate, frame, arches, trusses, cable stayed, suspended. Loads and influences on bridges. Tunnels. Engineering facilities equipment. Bridge construction technologies.Preliminary design of a bridge with a steel structure.Collection of loads and calculation of steel bridge components.

Prerequisites and co-requisites

No requirements

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Collection of loads and execution of bridge calculations	60.0%	30.0%
Preliminary design of the bridge	60.0%	30.0%
Colloquium	60.0%	40.0%

Recommended reading	Basic literature	1. Szczygieł J.: Mosty z betonu zbrojonego i sprężonego. WKiŁ, Warszawa 1978. 2. Czudek H., Radomski W.: Podstawy mostownictwa. PWN, Warszawa 1983. 3. Ryżyński A., Wołowicki W., Skarżewski J., Karlikowski J.: Mosty Stalowe. PWN, 4. Leonhardt F.: Podstawy budowy mostów betonowych. WKiŁ, Warszawa 1982. 5. Madaj A., Wołowicki W.: Budowa i utrzymanie mostów. WKiŁ, Warszawa 1995.
	Supplementary literature	1. Madaj A., Wołowicki W.: Mosty betonowe. WKiŁ, Warszawa 1998. 2. Jarominiak A.; Mosty podwieszone. Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 1997. 3. Cholewo J., Sznurowski M.: Mosty kolejowe i fundamentowanie. WKiŁ, Warszawa 1965. 4. Furtak K., Mosty zespolone, PWN, Warszawa, Kraków, 1999 5. Biliszczuk J., Mosty podwieszone. ARKADY, Warszawa 2005
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	1. List the types of bridges. 2. What bridge structures are made of steel? 3. What is reinforced concrete? 4. Mark the elements that are part of the structure of the braking bracing. 5. What are the working phases of composite structures? 6. Sketch a cross-section of the road, composite, simple support deck bridge. 7. How is the the impact of the wheel against the rail head transmitted? 8. What is a secondary suspension? 9. How are expansion forces transmitted in arch beams?	
Work placement	Not applicable	