GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Trasport infrastructure design, PG_00072527		
Field of study	Civil Engineering		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Marcin Budzyński	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	10.0	0.0	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	2.0	28.0	50

Subject objectives

1. Traffic Engineering: The objective of this course is to present the operating principles of transport interchange hubs, the criteria for optimizing the selection of road design solutions, and safety standards for specific elements of road infrastructure.
2. Road Construction: The objective of this course is to present the principles of diagnosing, maintaining, and managing road pavements.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W03] demonstrates in-depth preparation in the application of analytical, numerical and experimental tools and methods to tasks in the construction industry	The student demonstrates an indepth understanding of the application of analytical, numerical, and experimental tools and methods to carry out tasks related to the design of transportation infrastructure	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects
[K7_U03] uses, to a deeper extent, appropriately selected analytical, numerical and experimental tools and methods to carry out tasks in the construction industry	Students apply, to a greater extent, appropriately selected analytical, numerical, and experimental tools and methods to carry out tasks related to the design of transportation infrastructure	[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

<table>
<tr><td>Subject contents</td><td>Course content – lecture
Traffic Engineering:

Types of transport interchange hubs; principles for evaluating transport interchange hubs. Multi-criteria analysis as a tool for optimizing the selection of road design solutions. Safety of selected elements of road infrastructure.

Road Construction:

Basic diagnostic methods for road pavements. Advanced diagnostic methods for road pavements. Technologies for pavement maintenance and reconstruction. Road pavement management systems.

Course content – project
Traffic Engineering:

Analysis and classification of transport users, including the identification of their needs. A methodology for assessing accessibility as an integral part of the design process for transport infrastructure elements. Conducting an accessibility audit of a selected transport hub (project).
Road Construction:

The course focuses on the design of a road surface repair or reconstruction project, taking into account the diagnostic data provided.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Traffic Engineering: Roads and Highways I, Roads and Highways II
Road Construction: Roads and Highways I, Roads and Highways II</td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>project</td><td>60.0%</td><td>80.0%</td></tr><tr><td>attendance</td><td>80.0%</td><td>20.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>Traffic Engineering:
1. M. Sitarz, Transport w epoce zróżnicowanych potrzeb. Przesiadka bez barier, Akademia WSB, Dąbrowa Górnicza 2023
2. WR-D-43-1 Wytyczne projektowania infrastruktury transportu zbiorowego. Część 1: Planowanie infrastruktury transportu zbiorowego
3. Ustawa z dnia 19 lipca 2019 r. o zapewnianiu dostępności osobom ze szczególnymi potrzebami (Dz.U. 2019 poz. 1696)
• Road Construction:
1. Bogdan Stypułkowski "Zagadnienia utrzymania i modernizacji dróg i ulic", WKŁ 2000;
2. GDDKiA "Wytyczne Diagnostyki Stanu Nawierzchni";
3. Wytyczne WR-D serii 80.</td></tr><tr><td>Supplementary literature</td><td></td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Identification of barriers at transport interchanges.
2. Principles of transport interchange assessment.
3. Sustainable transport development as a basis for transport infrastructure design.
4. Road pavement assessment: methods and tools.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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