GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Roads and Motorways II, PG_00066675						
Field of study	Civil Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject	2025/2026			
Education level	first-cycle studies		Subject group				
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 Transportation Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Jacek Alenowicz					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	30.0	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	Getting basic knowledge on designing of intersections and pavement structures and on technology of road pavements.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W07] Understand the investment's impact on the environment and the interrelationships and dependencies between the building structure and the natural environment	The student has knowledge and demonstrates understanding of the impact of a road investment on the environment and the interconnections and dependencies between the planned road or highway and the natural environment	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
[K6_W03] Demonstrate knowledge and understanding of the processes, established standards and design methods in the civil engineering subject area and of their limitations.	The student has the ability to distinguish the characteristics of the basic technological processes in relation to requirements of pavement structure layers and selection of solutions. The student knows the principles of simple road intersection designing. The student is able to assess the conditions of road pavement operation.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
[K6_U07] Design and build engineering structures in a sustainable manner, with care for the natural environment and a minimum carbon footprint	The student is able to design road construction in a sustainable way, with care for the natural environment and a minimal carbon footprint	[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_U03] Design engineering objects and details, processes and engineering systems by applying appropriate standards and methods of design.	Student is able to adjust the pavement structure to particular subgrade conditions and road traffic. He knows the basic rules of raod pavements construction and road intersections design.	[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

Subject contents

Course content – lecture

Road facilities. Basics of design of standards intersections. Classification of road pavements.Basics of design of pavement structure. Catalogue of typical pavement structures. Formation layer and capping layer. Road materials (bitumens, aggregates, asphalt mixes). Base layers stabilized with hydraulic binders. Unbound aggregate bases. Asphalt pavements. PCC pavements. Basics of pavement evaluation.

Prerequisites and co-requisites

Scope of lectures and designing from the subject "Roads and Motorways I"

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Project I	60.0%	30.0%
Project II	60.0%	30.0%
Pass of lectures sem V and VI	60.0%	40.0%

Recommended reading

Basic literature

1. Wzorce i Standardy projektowania WRD, Ministerstwo Infrastruktury.
2. Piłat J., Radziszewski P., Nawierzchnie asfaltowe, WKŁ, 20043. Szydło A., Nawierzchnie drogowe z betonu cementowego, PolskiCement, 20044. Katalog typowych konstrukcji nawierzchni podatnych ipółsztywnych., GDDP, Warszawa, 2014

	Supplementary literature	1. Błażejowski K., Styk S., Technologia warstw asfaltowych, WKŁ, 2009.2. Judycki J i wsp.: Analizy i projektowanie konstrukcji nawierzchnipodatnych i półsztywnych. WKŁ 2014
	eResources addresses	
Example issues/ example questions/ tasks being completed	on e-Nauczanie course	
Practical activites within the subject	Not applicable	

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