GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Road infrastructure diagnostics, PG_00062465		
Field of study	Transport		
Date of commencement of studies	February 2027	Academic year of realisation of subject	2027/2028
Education level	second-cycle studies	Subject group	Specialty 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	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 Transportation Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Piotr Jaskuła	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	15.0	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	5.0	25.0	75

Subject objectives

Lecture: Pavement. Diagnostics as a part of the Pavement Management System and legal basis in Poland. Objectives and effects of diagnostics. Scope of tests. Criteria for pavement condition assessment based on DSN system. Diagnostics of airport, non-urban and urban pavements. Models for predicting pavement condition and assessing pavement durability.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W01] identifies in an in-depth way phenomena related to the field of study as well as theories describing them and possible methods of analyzing processes occurring in the life cycle of technical systems	Knows the goals and scope of pavement diagnostics.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
[K7_U02] presents logical and solid arguments regarding the obtained results, through analysis, synthesis of information in various technical contexts, critically approaching their interpretation	Is able to evaluate the results of the pavement assessment.	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task
[K7_K02] makes competent and ethical decisions, caring for the public interest and maintaining economic, social and environmental values	Can indicate the test for prediction of road surface condition.	[SK1] Assessment of group work skills [SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness

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

Lecture: Pavement. Diagnostics as a part of the Pavement Management System and legal basis in Poland. Objectives and effects of diagnostics. Scope of tests (surface condition, evenness, load-bearing capacity, anti-skid, noise) and methodology of pavement condition assessment. Criteria for pavement condition assessment based on DSN system. Diagnostics of airport, non-urban and urban pavements. Models for predicting pavement condition and assessing pavement durability.Lab: Visual assessment of the pavement condition of a selected road section. Pavement deflection tests using the FWD device. Longitudinal and transverse evenness and anti-skid properties of the pavement.Project: Determination of the technical condition of a section of an urban road based on visual assessment. Assessment of pavement load-bearing capacity. Assessment of evenness and anti-skid properties of the pavement.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></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>50.0%</td></tr>
<tr><td>Laboratory</td><td>60.0%</td><td>50.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>https://www.gov.pl/web/gddkia/diagnostyka-stanu-nawierzchni

Diagnostyka Stanu Nawierzchni - https://www.archiwum.gddkia.gov.pl/userfiles/articles/z/zarzadzenia-generalnego-dyrektor_17474/zarzadzenie%2034%20zalacznik%20wytyczne%20stosowania.pdf

Jerzy Piłat, Piotr Radziszewski, Nawierzchnie Asfaltowe, Wydawnictwo Komunikacji i Łączności. Warszawa 2007

Antoni Szydło, Nawierzchnie drogowe z betonu cementowego, Cement Polski, Kraków 2004</td></tr>
<tr><td>Supplementary literature</td><td>Thom N., Principles of Pavement Engineering, Emerald Publishing Limited, 2008</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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