



## Subject card

Subject name and code	Road infrastructure diagnostics, PG_00062465						
Field of study	Transport						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
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 Transportation Engineering -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Piotr Jaskuła					
	Teachers	dr hab. inż. Dawid Ryś dr hab. inż. Piotr Jaskuła					
Lesson types and methods of instruction	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_U05] cooperates with other people in the implementation of team work, both as a leader and a team member, effectively achieving set goals	Can collect the data	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
	[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.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge
	[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.	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
	[K7_K01] recognizes the importance of knowledge related to the field of study in solving cognitive and practical problems	Can prepare report	[SK2] Assessment of progress of work [SK4] Assessment of communication skills, including language correctness
[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.	[SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness [SK2] Assessment of progress of work [SK1] Assessment of group work skills	
Subject contents	<p>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.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	60.0%	50.0%
	Laboratory	60.0%	50.0%
Recommended reading	Basic literature	<p><a href="https://www.gov.pl/web/gddkia/diagnostyka-stanu-nawierzchni">https://www.gov.pl/web/gddkia/diagnostyka-stanu-nawierzchni</a></p> <p>Diagnostyka Stanu Nawierzchni - <a href="https://www.archiwum.gddkia.gov.pl/userfiles/articles/z/zarzadzenia-generalnego-dyrektor_17474/zarzadzenie%2034%20zalacznik%20wytyczne%20stosowania.pdf">https://www.archiwum.gddkia.gov.pl/userfiles/articles/z/zarzadzenia-generalnego-dyrektor_17474/zarzadzenie%2034%20zalacznik%20wytyczne%20stosowania.pdf</a></p> <p><a href="#">Jerzy Piłat, Piotr Radziszewski</a>, Nawierzchnie Asfaltowe, Wydawnictwo Komunikacji i Łączności. Warszawa 2007</p> <p>Antoni Szydło, Nawierzchnie drogowe z betonu cementowego, Cement Polski, Kraków 2004</p>	
	Supplementary literature	Thom N., Principles of Pavement Engineering, Emerald Publishing Limited, 2008	

	eResources addresses	Adresy na platformie eNauzanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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