GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00072909						
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	Optional 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	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. Bohdan Dołżycki					
	Teachers						

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	15.0	0.0	30

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	30	2.0	18.0	50

Subject objectives

To familiarize students with legal and technical requirements of road maintenance. Discussion of the principles of records roads. Presentation of the methods used in the diagnosis of paving and engineering objects in the road. Overview of pavement maintenance systems and network management systems of roads. Description of selected techniques used in road maintenance. Develop skills appropriate choice of maintenance and modernization of roads

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W04] analyses in-depth complex problems on the basis of reliable data and appropriately chosen methods, reaching logical conclusions	Student can assess the condition of the road pavement.	[SW1] Assessment of factual knowledge [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	Distinguishes between pavement maintenance systems and systems supporting efficient road network management.	[SU2] Assessment of ability to analyse information
[K7_W01] identifies in-depth the phenomena related to the field of study and the theories describing them, indicating reliable sources of knowledge and information relevant to the issues analysed	Student can indicate the directions of maintenance and modernization of roads. Develop, verify and evaluate the reconstruction project documentation.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
[K7_U02] interprets, in an in-depth way, phenomena and relationships between processes in the construction industry, using modern knowledge in line with the main trends in the development of scientific disciplines related to the field of study	Student can refer to the regulations and technical requirements relating to the maintenance of roads. Able to identify the actions needed to improve pavement.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject

<table>
<tr><td>Subject contents</td><td>Course content – lecture
1. Recording and ongoing assessment of pavement condition based on formal and legal requirements.
2. Factors causing pavement deterioration and types of pavement damage.
3. Pavement condition assessment systems (SOSN, DSN).
4. Methods of pavement maintenance.
5. Pavement management systems.

Course content – project
1. Assessment of the pavement condition, including an evaluation of the causes of pavement damage.
2. Pavement strengthening design using the CBR method.
3. Pavement strengthening design using deflection measurements method.</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>Lecture</td><td>60.0%</td><td>60.0%</td></tr>
<tr><td>Project</td><td>60.0%</td><td>40.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1. Eksploatacja dróg. IBDiM, Warszawa, 2011.
2. Katalog wzmocnień i remontów nawierzchni podatnych i półsztywnych. IBDiM, Warszawa 2001.
3. DSN - Diagnostyka Stanu Nawierzchni.
4. Zofka A. Proaktywna strategia zarządzania elementami infrastruktury drogowej. IBDiM Warszawa 2019</td></tr>
<tr><td>Supplementary literature</td><td>1. Radziszewski P., Piłat J.: Nawierzchnie asfaltowe. WKŁ, Warszawa, 2010.
2. Szydło A.: Nawierzchnie z betonu cementowego. Polski Cement. Kraków, 2004.
3. Road Materials and Pavments Desingn. Taylor&Francis Group.
4. Journal of tansportation Engineering. American Society of Civil Engineers.</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>Assessment of the technical condition of street sections.
Ability to evaluate damage to road pavements.
Design of pavement strengthening using the CBR method or the deflection-based method.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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