GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00065285		
Field of study	Systemy pomiarowe w transporcie szynowym		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
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	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Zbigniew Kędra	
	Teachers	dr inż. Zbigniew Kędra	

Lesson types

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

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 2328 Systemy pomiarowe w transporcie szynowym 2025/26 (Transport II st.)
https://enauczanie.pg.edu.pl/2025/course/view.php?id=2328

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	0.0	0.0	30

Subject objectives

The aim of the course is to acquaint students with the measurement systems used in rail transport, and teach basic measurements used in the rail road

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	Collaborates in a group to carry out tasks and perform diagnostic tests on railway	[SU2] Ocena umiejętności analizy informacji [SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania [SU1] Ocena realizacji zadania
[K7_K01] recognizes the importance of knowledge related to the field of study in solving cognitive and practical problems	Knows the importance of knowledge in the field of diagnostic measurements and their evaluation	[SK1] Ocena umiejętności pracy w grupie [SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce
[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 and describes railway diagnostic systems	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym [SW1] Ocena wiedzy faktograficznej

<table>
<tr><td>Subject contents</td><td>Course content – lecture
Characteristics, division and systematics of measuring systems in rail transport. Railway track geometry measurements (hand-held devices, measuring vehicles and geodetic systems). Profile and rail rail wear measurements. Measurement of corrugated rail wear. Systems for detecting damage to railway infrastructure elements. Video inspection of railway infrastructure. Acceleration and dynamics measurements of a rail vehicle. Measurements of the traction cable and its interaction with the pantograph. Measuring systems for railway vehicles. Systems and devices built into the railway track.

Course content – exercises
Measurements of width and cant in tracks and railway turnouts. Altitude measurements (geometric leveling) in track and railway turnouts. Measurements of arrows in the track and turnouts. Measurements of rail and rail turnout wear. Measurements of corrugated rail wear. Analysis of measurements carried out and preparation of reports.</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>50.0%</td><td>50.0%</td></tr>
<tr><td>Exercise</td><td>50.0%</td><td>50.0%</td></tr>
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<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>Kędra Z .: Materials from the lecture Measuring systems in rail transport

Kędra Z .: Materials for the laboratory Measuring systems in rail transport</td></tr>
<tr><td>Supplementary literature</td><td>Materiały informacyjne firm produkujących systemy pomiarowe
Strony internetowe producentów systemów pomiarowych
Id-1 (D-1), "Warunki techniczne utrzymania nawierzchni na liniach kolejowych", Warszawa 2005
Id-3 (D-4), "Warunki techniczne utrzymania podtorza kolejowego", Warszawa 2009
Id-4 (D-6), "Instrukcja o oględzinach, badaniach technicznych i utrzymaniu rozjazdów", Warszawa 2005</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<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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