



Subject card

Subject name and code	Road and Railway Engineering, PG_00044860										
Field of study	Geodesy and Cartography										
Date of commencement of studies	October 2020		Academic year of realisation of subject		2022/2023						
Education level	first-cycle studies		Subject group		Optional 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		6.0						
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 inż. Jacek Szmagliński								
	Teachers		dr inż. Bohdan Dotzycki  dr inż. Wojciech Kustra  mgr inż. Anna Gobis								
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM				
	Number of study hours	45.0	30.0	0.0	0.0	0.0	75				
	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	75		9.0		66.0	150				
Subject objectives	Presentation of engineering solutions used in railway and road engineering. Railway traffic control, inventory of railroads, elaboration of the results of track geometry measurements. Calculation of track systems of railway stations.										
Learning outcomes	Course outcome		Subject outcome			Method of verification					
	[K6_U02] can make basic geodetic drawings and read an architectural technical drawing		Create a simple project and understand the value of the project			[SU1] Assessment of task fulfilment					
	[K6_W10] has elementary knowledge and understands the concepts of architecture and urban planning, construction, environmental engineering and transport necessary to carry out studies related to planning and investment service		Performing simple infrastructure measurements			[SW1] Assessment of factual knowledge					
Subject contents	Lectures: 1. stations and tracks; turnouts, 2. track lengths: platforms, 3. railroad crossings; gauge, 4. Intermodal transport, traction network, 5. railway signalling, 6. Machinery and works performed on the tracks, 7. Measurements in the field. Exercises: 1-2. introduction to track gauge data analysis, 3-4. data analysis, 5. introduction, adjustment of the track axis on a straight line, 6. data analysis, 7. Trip.										
Prerequisites and co-requisites	Rail transport infrastructure										
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade						
	Excercises		100.0%		40.0%						
	Test		60.0%		60.0%						

Recommended reading	Basic literature	<p>Grułkowski S., Kędra Z., Koc W., Nowakowski M.J.: Drogi szynowe. WPG, Gdańsk 2013.</p> <p>Massel A.: Projektowanie linii i stacji kolejowych. PKP Polskie Linie Kolejowe, Warszawa 2010.</p> <p>Gocał J.: Geodezja inżynierijno-przemysłowa. AGH, Uczelniane Wydawnictwo Naukowo-Dydaktyczne, Kraków 2007.</p> <p>Instrukcja o organizacji i wykonywaniu pomiarów w geodezji kolejowej. D-19, 2000.</p> <p>Rodzaje i obieg dokumentacji geodezyjno-kartograficznej wykonywanej na poszczególnych etapach modernizacji linii kolejowych Ig-1. PKP PLK. Warszawa, 2010.</p> <p>Wytyczne dla osadzania znaków regulacji osi toru na konstrukcjach wsporczych (słupach) sieci trakcyjnej Ig-6. PKP PLK, Warszawa, 2011.</p> <p>Standard techniczny określający zasady i dokładności pomiarów geodezyjnych dla zakładania wielofunkcyjnych znaków regulacji osi toru Ig-7. PKP PLK, Warszawa, 2012.</p>
	Supplementary literature	<p>Instrukcja o oględzinach, badaniach technicznych i utrzymaniu rozjazdów Id-4. PKP Polskie Linie Kolejowe S.A. Warszawa 2005 r.</p> <p>Warunki techniczne utrzymania nawierzchni na liniach kolejowych. Id1 2005</p>
	eResources addresses	<p>Adresy na platformie eNauczanie: Inżynieria Drogowa i Kolejowa - Moodle ID: 30220 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30220">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30220</a></p>
	Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> <li>• List the types of railway stations,</li> <li>• describe track lengths and their calculation,</li> <li>• describe the dimensions of the platforms,</li> <li>• describe the travel requirements,</li> <li>• visibility calculations,</li> <li>• gauge description,</li> <li>• describe the assumptions of intermodal transport,</li> <li>• describe the most important elements of the traction network,</li> <li>• describe the principle of railway signaling operation,</li> <li>• describe the machines used in track works,</li> <li>• the ability to use a track gauge in track research.</li> </ul>
Work placement	Not applicable	