



Subject card

Subject name and code	Transportation Engineering, PG_00044375						
Field of study	Civil Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2023/2024		
Education level	first-cycle studies	Subject group					
Mode of study	Part-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Railway Engineering -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Sławomir Grulkowski					
	Teachers	dr inż. Michał Urbaniak dr inż. Mariusz Jaczewski dr inż. Sławomir Grulkowski					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	10.0	0.0	10.0	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	5.0		65.0	100	
Subject objectives	A student gains basic information roads and railroads, designs a section of a road and a technical project of a railroad horizontal bend. A student calculates basic elements of roads and railroads.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
Subject contents	Road and railroad transport system characteristics. Basic elements of road design. Crossings and junctions. Road surfaces. Railroad classification. Railroad construction elements. General information on railroad construction, maintenance and use. Calculating specified elements of roads and railroads. Designing a road project. Designing a railroad horizontal bend.						
Prerequisites and co-requisites	No requirements						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
		50.0%			30.0%		
	Project	50.0%			40.0%		
Recommended reading	Basic literature	1. Inżynieria ruchu, WKŁ, 1999 2. Piłat J., Radziszewski P., Nawierzchnie asfaltowe, WKŁ, 2004 3. Drogi szynowe. WPG, 2013					

	Supplementary literature	<p>Lipiński M., Tablice do tyczenia krzywych, cz II klotoida, PPWK, 1978</p> <p>Rozporządzenie Ministra Transportu i Gospodarki Morskiej w sprawie warunków technicznych, jakim powinny odpowiadać budowle kolejowe i ich usytuowanie. Dziennik Ustaw 1998 nr 151 poz. 987.</p> <p>Rozporządzenie Ministra Infrastruktury i Rozwoju z dnia 5~czerwca 2014 r. zmieniające rozporządzenie w sprawie warunków technicznych, jakim powinny odpowiadać budowle kolejowe i ich usytuowanie. Dziennik Ustaw 2014 poz. 867.</p> <p>Warunki techniczne utrzymania nawierzchni na liniach kolejowych Id-1 (D-1). PKP PLK S.A., Warszawa 2005 r.</p>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<p>List the basic construction elements of the road</p> <p>List the features of the rail surface elements</p> <p>What is the substructure ?</p>	
Work placement	Not applicable	