



Subject card

Subject name and code	Transportation Engineering, PG_00044375						
Field of study	Civil Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2021/2022		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
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. Sławomir Grulkowski dr inż. Waldemar Cyske dr inż. Michał Urbaniak				
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						
	Adresy na platformie eNauczanie:						
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		
	[K6_U13] knows principles of constrution of roads and railroads; can design a section of a road and railroad; can evaluate the technical condition of a road and railroad infrastructure		He has knowledge of the construction and technology of construction works in the field of communication engineering				
	[K6_W10] Has basic knowledge on design, construction and maintenance of roads and railroads		Has a basic knowledge of the design of the basic geometric systems of road and rail roads.				
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%		
			50.0%		30.0%		
	Project		50.0%		40.0%		

Recommended reading	Basic literature	<p>1. Inżynieria ruchu, WKŁ, 1999</p> <p>2. Piłat J., Radziszewski P., Nawierzchnie asfaltowe, WKŁ, 2004</p> <p>3. Drogi szynowe. WPG, 2013</p>
	Supplementary literature	<p>Lipiński M., Tablice do tyczenia krzywych, cz II kłotoidea, 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	
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	