



Subject card

Subject name and code	Traffic Engineering, PG_00044245						
Field of study	Civil Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2023/2024		
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	4	Language of instruction			Polish		
Semester of study	7	ECTS credits			5.0		
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. Wojciech Kustra					
	Teachers	dr inż. Wojciech Kustra mgr inż. Anna Gobis mgr inż. Tomasz Mackun					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	15.0	0.0	60
	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	60	8.0		57.0		125
Subject objectives	<p>The aim of the course is to familiarise students with the description and functioning of the human-vehicle-road- traffic-environment system (CPDRO), a description of the main factors influencing traffic generation and a review of traffic management methods.</p> <p>On this basis, the student should apply selected traffic management methods and design elements of road facilities taking into account efficiency, economic efficiency, traffic safety and environmental requirements.</p>						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U04] can correctly choose tools (analytical or numerical) to solve engineering problems in design of structures or construction process	The student is able to apply selected traffic research tools and basic traffic management tools in practice to assess the performance of a selected road facility and apply the most effective methods and measures for traffic management.			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_U17] has specialized skills in civil engineering within offered specialization	The student is able to use traffic analyses on a road section, or intersection necessary to estimate levels of freedom of movement at designed intersections in the diploma thesis. The student is able to use issues from Traffic Engineering in the diploma thesis.			[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information		
	[K6_W16] Has deeper and adequate knowledge of civil engineering, within offered specialization	The student has basic knowledge of the functioning of the human-vehicle-road-environment system. He/she also has knowledge of traffic research methods and tools concerning traffic management.			[SW1] Assessment of factual knowledge		

Subject contents	<p>LECTURE</p> <p>Traffic engineering.</p> <p>Road users - man as a subject in traffic.</p> <p>Vehicles and their traffic conditions.</p> <p>Capacity of junctions with and without traffic lights, roundabouts.</p> <p>Capacity of road sections.</p> <p>Basic parameters of roads</p> <p>The issue of different transport systems.</p> <p>Road safety.</p> <p>The role of traffic volume and speed as basic traffic parameters.</p> <p>Fundamentals of modelling and vehicle traffic analysis.</p> <p>Road and environment. Road and traffic, climatic and meteorological factors. Traffic characteristics and parameters.</p> <p>Traffic surveys, measurements and analysis.</p>														
Prerequisites and co-requisites															
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="453 770 794 801">Subject passing criteria</th> <th data-bbox="799 770 1141 801">Passing threshold</th> <th data-bbox="1145 770 1492 801">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="453 801 794 833"></td> <td data-bbox="799 801 1141 833">50.0%</td> <td data-bbox="1145 801 1492 833">20.0%</td> </tr> <tr> <td data-bbox="453 833 794 864"></td> <td data-bbox="799 833 1141 864">100.0%</td> <td data-bbox="1145 833 1492 864">40.0%</td> </tr> <tr> <td data-bbox="453 864 794 896"></td> <td data-bbox="799 864 1141 896">100.0%</td> <td data-bbox="1145 864 1492 896">40.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade		50.0%	20.0%		100.0%	40.0%		100.0%	40.0%
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Recommended reading	Basic literature	<p>Jamroz K. i inni.: Systemy sterowania ruchem ulicznym. WKŁ, 1984 r.</p> <p>Krystek R. i inni: Komputerowe systemy sterowania ruchem ulicznym i drogowym. Przykłady zastosowań. WKŁ 1984</p> <p>Leško M., Guzik J.: Sterowanie ruchem drogowym. WPS, 2000. Malarski M.: Inżynieria Ruchu Lotniczego OWPW, 2005</p> <p>Czasopisma: Transport Miejski i Regionalny, Traffic Engineering & Control, Przegląd ITS, Autostrady</p>													
	Supplementary literature	<p>Highway Capacity Manual, TRR</p> <p>Roger P. Roess, William R. McShane, Elena S. Prassas, Traffic Engineering</p> <p>Institute of Transportation Engineers, Trip Generation Manual</p>													
	eResources addresses	Adresy na platformie eNauczanie:													
Example issues/ example questions/ tasks being completed	Development of a selected issue in the field of traffic engineering. Methods for calculating the capacity of roundabout-type intersections, ordinary intersections and intersections with traffic lights. Traffic signal design. Traffic organisation design for intersections														
Work placement	Not applicable														