



Subject card

Subject name and code	Road Traffic Engineering, PG_00044621						
Field of study	Transport						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2025/2026		
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	Full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		5.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor						
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	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		5.0		60.0	125
Subject objectives	The aim of the course is to familiarize students with the description and operation of the system, the system man - vehicle - road - traffic - environment (CPDRO), a description of the main factors affecting the occurrence of road traffic, and review of traffic management methods. On this basis, the student should apply selected methods of traffic management and road facilities design elements with regard to efficiency, economic efficiency, safety and environmental requirements.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W09] has basic knowledge of transport traffic engineering to understand its importance for transport operation and differentiate between how it is applied in different modes of transport		The student has a basic knowledge of the functioning of the system of human, vehicle, road environment. He also has knowledge of research methods and tools for traffic on about managed traffic.		[SW1] Assessment of factual knowledge		
	[K6_K01] able to think and act creatively and enterprisingly; able to define priorities to support the delivery of an individual or group task; understands the need for continuous education and taking responsibility as a professional for their work and the work of the team		Student CPDRO defines the elements of the system, establishes methods of measuring traffic, performs measurements and on that basis the functioning of the analyzed object. He then describes the relationship between the basic parameters of the traffic, selects the method and means of traffic organization, calculates bandwidth elements of the road network and evaluates traffic conditions, then designing elements of traffic organization.		[SK5] Assessment of ability to solve problems that arise in practice		
	[K6_U08] able to solve simple transport logistics and traffic engineering problems		Student is able to put into practice some of the tools motion studies and basic tools for traffic management to assess the functioning of the road object and uses the most effective ways and means to manage traffic.		[SU4] Assessment of ability to use methods and tools		

Subject contents	LECTURE Road traffic engineering. CPD system. Road users - man as a subject in motion. Vehicles and their traffic conditions. Vehicle maneuvers. Mechanics of vehicle movement. Basics of modeling dynamics and analysis of vehicle motion. Road and surroundings. Road and traffic factors, climatic and meteorological factors. Features and parameters of movement. Research, measurements and traffic analysis. Modeling of road traffic. The role of traffic volume and speed as basic traffic parameters. Capacity of intersections. Capacity of road sections and streets. Traffic organization methods. Means of traffic organization. Traffic lights. Traffic safety measures. Basics of traffic control. EXERCISESLABORATORY Methods of calculating the capacity of roundabout intersections, ordinary intersections and intersections with traffic lights.DESIGN EXERCISES Design of traffic organization at an intersection. Design of traffic lights at the crossroads.		
Prerequisites and co-requisites	Knowledge of the Fundamentals of Transport Systems.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		90.0%	20.0%
		60.0%	60.0%
		90.0%	20.0%
Recommended reading	Basic literature	Gaca S., Suchozewski W., Tracz M.:Inżynieria Ruchu Drogowego WKŁ 2008	
	Supplementary literature	Jamroz K. i inni.: Systemy sterowania ruchem ulicznym. WKŁ, 1984 r.Krystek R. i inni: Komputerowe systemy sterowania ruchem ulicznym i drogowym. Przykłady zastosowań. WKŁ 1984Leśko M., Guzik J.: Sterowanie ruchem drogowym. WPŚ, 2000.Malarski M.: Inżynieria Ruchu Lotniczego OWPW, 2005Czasopisma: Transport Miejski i Regionalny, Traffic Engineering & Control, Przegląd ITS, Autostrady	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		