



Subject card

Subject name and code	Road traffic control, PG_00044652						
Field of study	Transport						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2024/2025		
Education level	first-cycle studies	Subject group			Optional subject group 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	4	Language of instruction			Polish		
Semester of study	7	ECTS credits			4.0		
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 hab. inż. Jacek Oskarbski					
	Teachers	mgr inż. Lucyna Gumińska dr hab. inż. Jacek Oskarbski					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	15.0	0.0	0.0	45
	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	45	10.0		45.0		100
Subject objectives	Acquiring knowledge of traffic control systems for transport, measures and methods for urban traffic control and traffic control on motorways and motorways. Acquiring skills in planning and designing traffic control systems. Acquiring skills in the design of accommodating and adaptive traffic lights and the coordination of traffic lights using modern tools. Acquiring knowledge in the operation of traffic control systems. You will be prepared to cooperate with other branches in the field of traffic signal design.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U12] able to select tools and methods, carry out assessments and simple tests of transport systems to an extent required of the specialty / learning profile		Ability to recognise and name traffic control systems for transport. The ability to plan a traffic control system for urban and rural roads. Ability to design accommodative and adaptive traffic signal plans and signal coordination.		[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
	[K6_W17] has proficiency in transport systems as appropriate for their specialty		Students will be familiar with traffic control measures and methods, and the principles of planning and designing road traffic control systems.		[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
Subject contents	Definitions, basics of traffic control systems. Traffic control systems as Intelligent Transport Systems services. Characteristics of traffic control systems. Means and methods of urban traffic control Planning and design of traffic control systems. Design of accommodative and adaptive traffic lights and signal coordination. Traffic signalling and road safety. Traffic control under incident conditions and during mass events. Priorities in traffic control. Driver information systems. Traffic management systems on motorways and motorways. Operation of traffic control systems.						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Passing the lectures	60.0%	60.0%
	Passing the workshops	90.0%	20.0%
	Passing the laboratory	90.0%	20.0%
Recommended reading	Basic literature	<p>1. Jamroz K. i inni.: Systemy sterowania ruchem ulicznym. WKŁ, 1984 r. 2. Krystek R. i inni: Komputerowe systemy sterowania ruchem ulicznymi drogowym. Przykłady zastosowań. WKŁ. 19843. Leško M.,Guzik J.: Sterowanie ruchem drogowym. WPS, 2000.4. Gaca S.,Suchorzewski W., Tracz M.: Inżynieria Ruchu Drogowego WKŁ. 20085.Tracz M., Allsop R.E.: Skrzyżowania z sygnalizacją świetlną. WKŁ.19906.Wrześniowski Z. i inni: Koordynacja sygnalizacji świetlnej. WKŁ.19777. Krystek R. i inni: Symulacja ruchu potoku pojazdów WKŁ.19808. Krystek R i inni: Węzły drogowe i autostradowe. WKŁ. 20089.Michael Kyte, Maria Tribelhorn: Operation, Analysis, and Design of Signalized Intersections: A Module for the Introductory Course in Transportation Engineering. 201410. Coleman A. O'Flaherty: Transport Planning and Traffic Engineering. 1997.11. Peter Guest, Mike Slinn, Paul Matthews: Traffic Engineering Design: Principles and Practice. Elsevier Butterworth-Heinemann, 2005.</p>	
	Supplementary literature	<p>Czasopisma: Transport Miejski i Regionalny, Traffic Engineering & Control, Przegląd ITS, Autostrady</p>	
	eResources addresses	<p>Adresy na platformie eNauczenie:</p>	
Example issues/ example questions/ tasks being completed	<p>How does the linear coordination of traffic lights differ from network coordination? What possibilities do we have with network coordination used in urban traffic control systems? State the difference between centralised and decentralised traffic control systems. Characterise one selected traffic control system (SCATS, SCOOT.) How can we manage traffic on interchange sections of motorways and expressways using traffic control systems? What are the purposes of using traffic control systems, make a proposal for the use of a set of systems on a motorway or urban street system. Give the formula for calculating the capacity of an inlet at an intersection with traffic lights. What does saturation intensity depend on How can we prioritise public transport vehicles using a traffic control system? What traffic signal parameters can we optimise using traffic control systems. Characterise these parameters. What are the types of traffic signal systems in terms of the way the programme is implemented and the repeatability of operation. What are the advantages and disadvantages of the different types. How do you assess the validity of the use of signalling at an intersection? Give an example of: a) one group of lanes on an intersection, b) two groups of lanes on an intersection, c) three groups.</p>		
Work placement	<p>Not applicable</p>		

Document generated electronically. Does not require a seal or signature.