



## Subject card

Subject name and code	Road traffic control, PG_00050390						
Field of study	Transport						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			2.0		
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	dr hab. inż. Jacek Oskarbski mgr inż. Karol Źarski					
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	0.0		0.0		45
Subject objectives	Acquiring knowledge about area systems of traffic control in transport, means and methods of urban traffic control and traffic control on motorways and motorways. Acquiring skills of planning and designing area traffic control systems. Acquiring the ability to design and assess the effectiveness of solutions (traffic efficiency and safety) within control systems.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_W05] has basic knowledge of control in transport systems	The ability to recognise and name traffic control systems for transport. The ability to plan a traffic control system in urban and rural roads and their integration.			[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		
	[K7_U13] able to solve detailed problems of transport systems to an extent required of the specialty	Ability to evaluate the solution in terms of safety and traffic efficiency.			[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		
	[K7_W13] has advanced knowledge of the design and management of transport systems to an extent required of the specialty	The ability to design signalling in an area system.			[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		
Subject contents	Area traffic control systems using traffic lights (centralised, decentralised systems). Substitute measures of safety. Urban Traffic Control Systems. Motorway and expressway traffic control systems (entrance metering, speed management, warnings, messages, variable message signs). Cooperation between urban and suburban systems. Optimisation of control parameters. Traffic control during incidents and mass events. Priorities in traffic control. Accessibility control. Traffic management centres.						

Prerequisites and co-requisites	Knowledge of the principles of planning and design of traffic signals and traffic organisation. Familiarity with the design of linear coordination of signalling and with accommodating and fixed time signalling.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Passing the exercises	90.0%	30.0%
	Pass mark for lecture	60.0%	40.0%
	Passing laboratory	90.0%	30.0%
Recommended reading	Basic literature	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 Practice. Elsevier Butterworth-Heinemann, 2005.	
	Supplementary literature	Journals: Transport Miejski i Regionalny, Traffic Engineering & Control, Przegląd ITS, Autostrady	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	State the difference between a centralized and decentralized traffic control system. Characterise one area based traffic control system of your choice. How can we manage traffic on interstitial sections of motorways and expressways using traffic control systems. What are the goals and methods of using traffic control systems in cities and on? What are the aims and methods of using traffic control systems in towns and on rural roads. How can we prioritise public transport vehicles using a traffic control system? How can we prioritise public transport vehicles using a traffic control system? Which traffic signal parameters can we optimise using traffic control systems? traffic control systems. Characterise these parameters. How can we assess the level of traffic safety using surrogate measures.		
Work placement	Not applicable		