



Subject card

Subject name and code	Road traffic control, PG_00062455						
Field of study	Sterowanie ruchem drogowym						
Date of commencement of studies	February 2025		Academic year of realisation of subject		2025/2026		
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		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering -> Wydział Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Jacek Oskarbski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	15.0	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		5.0		25.0	75
Subject objectives	To obtain knowledge of traffic control systems in transportation, means and methods of urban traffic control and traffic control on highways and expressways. To acquire skills in planning and designing area traffic control systems. To acquire the ability to design and evaluate the effectiveness of solutions (traffic efficiency and safety) within control systems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W01] identifies in an in-depth way phenomena related to the field of study as well as theories describing them and possible methods of analyzing processes occurring in the life cycle of technical systems		Ability to recognize and name traffic control systems for transportation. The ability to plan a traffic control system in cities and on urban roads and their integration.		[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym [SW2] Ocena wiedzy zawartej w prezentacji [SW1] Ocena wiedzy faktograficznej		
	[K7_U02] presents logical and solid arguments regarding the obtained results, through analysis, synthesis of information in various technical contexts, critically approaching their interpretation		Ability to design area system traffic signals and other selected ITS traffic control services, supported by analysis and simulations.		[SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania [SU4] Ocena umiejętności korzystania z metod i narzędzi [SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU2] Ocena umiejętności analizy informacji [SU1] Ocena realizacji zadania		
	[K7_K02] makes competent and ethical decisions, caring for the public interest and maintaining economic, social and environmental values		Ability to evaluate the solution in terms of safety, traffic efficiency, and minimization of negative environmental impact, taking into account economic aspects.		[SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce [SK4] Ocena umiejętności komunikacji, w tym poprawności językowej [SK3] Ocena umiejętności organizacji pracy [SK1] Ocena umiejętności pracy w grupie [SK2] Ocena postępów pracy		

Subject contents	Elements of traffic signals and methods of traffic control using signals. Area traffic control systems using traffic signals (centralized, decentralized systems). Substitute measures of brd. Urban Traffic Control Systems. Traffic control systems on highways and expressways (traffic metering at entrances, speed management, warnings, messages, variable message signs). Cooperation of urban and suburban systems. Optimization of control parameters. Traffic control under incident conditions and during mass events. Priorities in traffic control. Controlling accessibility. Traffic management centers.		
Prerequisites and co-requisites	Knowledge of the principles of planning and design of traffic signals and traffic organization. Knowledge of the basics of designing linear coordination of signaling and accommodative and fixed-time signaling.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Credit for exercises	90.0%	30.0%
	Credit for the laboratory	90.0%	30.0%
	Credit for lectures	60.0%	40.0%
Recommended reading	Basic literature	Jamroz K. i inni.: Systemy sterowania ruchem ulicznym. WKŁ, 1984 r.Krystek R. i inni: Komputerowe systemy sterowania ruchem ulicznymi drogowym. Przykłady zastosowań. WKŁ 19843. Leško M., Guzik J.:Sterowanie ruchem drogowym. WPS, 2000.Gaca S., SuchorzewskiW., Tracz M.: Inżynieria Ruchu Drogowego WKŁ 2008.Tracz M.,Allsop R.E.: Skrzyżowania z sygnalizacją świetlną. WKŁ 1990.Wrześniowski Z. i inni: Koordynacja sygnalizacji świetlnej. WKŁ 1977Krystek R. i inni: Symulacja ruchu potoku pojazdów WKŁ1980Krystek R i inni: Węzły drogowe i autostradowe. WKŁ 2008.MichaelKyte, Maria Tribelhorn: Operation, Analysis, and Design of SignalizedIntersections: A Module for the Introductory Course in Transportation Engineering. 2014Coleman A. O'Flaherty: Transport Planning andTraffic Engineering. 1997.Peter Guest, Mike Slinn, Paul Matthews:Traffic Engineering Design: Principles Practice.ElsevierButterworth-Heinemann, 2005.	
	Supplementary literature	Transport Miejski iRegionalny,TrafficEngineering&Control, Przegląd ITS, Autostrady	
	eResources addresses		
Example issues/ example questions/ tasks being completed	State the difference between a centralized and decentralized traffic control system. Characterize one selected area-based traffic control system. How can we manage traffic on interstitial sections of highways and expressways using traffic control systems. What are the goals and methods of using traffic control systems in cities and on urban roads. How we can prioritize public transportation vehicles using a traffic control system. What traffic signal parameters can we optimize using traffic control systems. Characterize these parameters. How can we evaluate the level of traffic safety using surrogate measures.		
Practical activities within the subject	Not applicable		

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