GDAŃSK UNIVERSITY OF TECHNOLOGY

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 -> Wydziały 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. Leśko M., Guzik J.:Sterowanie ruchem drogowym. WPŚ, 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 activites within the subject	Not applicable

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