



Subject card

Subject name and code		Traffic organization and control, PG_00059871						
Field of study		Civil Engineering						
Date of commencement of studies		February 2025		Academic year of realisation of subject		2025/2026		
Education level		second-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		1		Language of instruction		Polish		
Semester of study		2		ECTS credits		4.0		
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		dr hab. inż. Jacek Oskarbski				
		Teachers						
Lesson types and methods of instruction		Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
		Number of study hours	30.0	0.0	30.0	0.0	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		35.0	100
Subject objectives		To familiarise Students with the methods and means of traffic organisation and traffic control and with practical traffic organisation design skills.						
Learning outcomes		Course outcome		Subject outcome		Method of verification		
		[K7_W15] has deep and adequate knowledge of civil engineering, within offered specialization and profile		The student has factual knowledge and is able to apply it in solving problems related to organisation and traffic control.		[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
		[K7_W06] has expanded knowledge about traffic theory, planing of road networks and junctions design, regarding economy, safety and environmental aspects		The student describes and classifies methods and means of traffic organisation and traffic control. Identifies traffic management problems and solves them.		[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		
		[K7_U15] has advanced skills in civil engineering within offered specialization/profile		Students will be able to use advanced tools in design of organisation and traffic control.		[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_U07] is able to design elements of road network, to apply the rules of traffic organisation and control, taking into account economy, safety and environmental factors,		A student selects methods of traffic organisation. Carries out traffic organisation design and traffic control design traffic.		[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		

Subject contents	Traffic organisation methods and measures. Systems of priority routes and one-way streets. Accessibility and parking. Organisation of pedestrian and cycle traffic. Priorities for selected groups of vehicles. Vertical and horizontal signage. Charging system for entering traffic zones. Traffic safety devices. Speed management. Traffic signal design. Intelligent Transport Systems services. Advanced traffic management.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Exam	60.0%	60.0%
	Passing the laboratory	90.0%	40.0%
Recommended reading	Basic literature	<p>1. Jamroz K. i inni.: Systemy sterowania ruchem ulicznym. WKŁ, 1984r. 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. 11. Peter Guest, Mike Slinn, Paul Matthews: Traffic Engineering Design: Principles and Practice. Elsevier Butterworth-Heinemann, 2005.</p>	
	Supplementary literature	<p>Journals: Transport Miejski i Regionalny, Traffic Engineering & Control, Przegląd ITS, Autostrady</p>	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	<p>1. What is the one-way street system. Give the principles of its use, list the advantages and disadvantages of this system. 2. What are congestion charging systems and for what purpose such systems are used. 3. What is speed management, please give examples. 4. Give a breakdown of traffic calming measures by road function, speed and type of traffic. Please give one example for each traffic calming group. 5. For what purpose is public transport prioritisation used. Please give three examples of possible measures that provide priority to public transport vehicles. 6. State the purposes and requirements of the use of vertical signage. Give three examples of mistakes made when designing vertical signage. 7. List the methods and describe the method chosen for organising roadworks. 8. List the advantages and disadvantages of using traffic lights. How can you assess the appropriateness of introducing a traffic signal at an intersection. 9. Describe an example of a public transport vehicle management and priority system for public transport vehicles using Intelligent Transport Systems measures. 10. What are the objectives of the use of ITS (Intelligent Transportation Systems). Provide a proposal for the use of a set of systems on the motorway (list the individual subsystems and characterise each in two sentences the principle of operation and for what purpose it is introduced). 11. Give a definition of ITS (Intelligent Transportation Systems). Make a proposal for the application of a set of systems in an urban street system (list the individual subsystems and characterise each in two sentences the principle of operation and for what purpose it is introduced). 12. List the traffic organisation measures. What are the basic objectives of traffic organisation. 13. List the most common deficiencies in the use of temporary horizontal markings that may result in traffic incidents.</p>		
Work placement	Not applicable		

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