



Subject card

Subject name and code	, PG_00065221						
Field of study	Transport						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
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						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Oskarbski					
	Teachers	mgr inż. Karol Źarski 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	0.0	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	0.0		0.0		45
Subject objectives	To familiarise and extend the student's knowledge of air, water, rail and road transport control and management systems.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_U04] prepares and presents convincing, professional presentations of analysis results with their in-depth interpretation	The student can prepare and present the results of analysis and interpretation of results using specialised transport management tools/software.			[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		
	[K7_K01] recognizes the importance of knowledge related to the field of study in solving cognitive and practical problems	The student will be able to solve specific problems concerning the management of transport systems and the management of transport infrastructure using control systems.			[SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness [SK3] Assessment of ability to organize work [SK2] Assessment of progress of work		
	[K7_W03] demonstrates in-depth preparation in the application of analytical methods and techniques for formulating and solving problems	The student deepens his knowledge of control and management in transport systems			[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge		
Subject contents	Fundamentals of management and control for all areas of transport. Management, supervision and control in transport systems. Control tasks and methods of solving control problems. Transport traffic control as an element of control in large systems. Types of control of transport processes. Functions of control. Methods and tools in the process of traffic control of aircraft, water, rail and road vehicles. Infrastructure of control systems. Road, rail, air, sea traffic control - common features and differences. Modern technologies in transport control. Information technology in the process of transport control. Control procedures. Legal regulations in the area of transport control.						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	passing the workshops	90.0%	25.0%
	passing the project	90.0%	25.0%
	passing the lectures	60.0%	50.0%
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. Gaca S., Suchorzewski W., Tracz M.: Inżynieria Ruchu DrogowegoWKŁ 20084. Małarski M.: Inżynieria Ruchu Lotniczego OWPW, 20055. M. Dąbrowa-Bajon:Podstawy sterowania ruchem kolejowym.Funkcje, wymagania, zarys techniki. OWPW 20076. S. Gucma: Inżynieria ruchu morskiego. Okrętownictwo i Żegluga Sp.z o.o., Gdańsk 20017. Jacyna M.: Modele wielokryterialne w zastosowaniu do ocenysystemów transportowych.Wyd.Pol.Warszawskiej,Warszawa 2002.</p>	
	Supplementary literature	<p>Journals: Transport Miejski i Regionalny, Transport</p> <p>Szynowy, Przegląd Transportowy</p>	
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Sterowanie w systemach transportowych sem.2 Transport 2024/2025 - Moodle ID: 42291 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=42291</p>	
Example issues/ example questions/ tasks being completed	<p>1. Air transport control systems (navigation systems, landing systems, emergency systems, etc.) Structure, tasks, responsibilities of air traffic services and airspace and control at airports. . Procedures and regulations2.Traffic control in rail transport (fundamentals of rail traffic organisation, organisation of services, train control systems, diagnostic systems, traveller information systems, hardware structure, level crossings, local and regional train traffic management centre). Structure of metro vehicle management and control systems. . Procedures and regulationsControl systems in waterborne transport (e.g. AIS, VTS). Organisation of services in water transport. Procedures and regulations4 Traffic control in road transport (examples of selected control systems) 5.5 - Integration of control systems in different modes of transport.</p>		
Work placement	Not applicable		

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