



Subject card

Subject name and code	, PG_00066215						
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	2		Language of instruction			Polish	
Semester of study	3		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. Daniel Kaszubowski				
	Teachers						
Lesson types and methods of instruction	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						
	Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/index.php?id=7387						
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	<p>The main purpose of the course is introduction into practical aspects of implementation of modern solutions in logistics aimed at increased effectiveness, reliability and operational flexibility. Problems of utilisation of interent of things in logistics are discussed, as well as challenges of increasing automation and robotisation of logistics operations. Main technology trends were highlighted, indicating how expected technology trends could shape requirements for practical skills within intellodent logistics systems implementation area.</p> <p>Laboratory classes cover the use of FlexSim software in applications related to modeling logistics systems, including autonomous warehouse vehicles and advanced logic for controlling model elements.</p>						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	[K7_K02] makes competent and ethical decisions, caring for the public interest and maintaining economic, social and environmental values		Ability to select appropriate KPIs to evaluate logistics processes			[SK5] Assessment of ability to solve problems that arise in practice	
	[K7_W02] explains the importance and interdependence of key components describing transport systems and processes and their environment, using in-depth knowledge in accordance with the main trends in the development of scientific disciplines related to the field of study		Ability to identify factors that determine the effectiveness of transport and logistics processes at the operational level			[SW3] Assessment of knowledge contained in written work and projects	
	[K7_U01] creates innovative solutions to complex and unstructured problems, taking into account the variability of the environment by synthesizing information from many sources, using analytical, simulation and experimental methods		Ability to analyze complex logistics processes for the purposes of their computer modeling.			[SU4] Assessment of ability to use methods and tools	

Subject contents	<div>1. Introduction to intelligent systems and solutions</div> <div>2. Factors supporting implementation of intelligent solutions</div> <div>3. Logistics 4.0 and intelligent logistics chain</div> <div>4. The meaning and functionality of an Internet of Things (IoT)</div> <div>5. Examples of an IoT impleementation.</div> <div>6. Determinants of work procesess automation</div> <div>7. Intelligent industry and intelligent factory</div> <div>8. Intelligent solutions in transportation, logistics and warehousing.</div> <div>9. Modeling of logistics processes with FlexSim</div>		
Prerequisites and co-requisites	General knowledge of issues related to logistics management and solutions used in intelligent transport systems.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	practical excercises	60.0%	40.0%
	single choice test	60.0%	60.0%
Recommended reading	Basic literature	Smart City. Informacja przestrzenna w zarządzaniu inteligentnym miastem. Wydawnictwo Naukowe PWN, Warszawa 2016r. red. Gotlib D., Olszewski R.	
	Supplementary literature	n/a	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	<div>Modeling the use of AGVs in logistics processes</div> <div>Basics of using network diagrams (ProcessFlow) in modeling</div>		
Work placement	Not applicable		

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