



Subject card

Subject name and code	, PG_00065234						
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. Daniel Kaszubowski					
	Teachers	dr hab. Daniel Kaszubowski mgr inż. Konrad Biszko					
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						
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	Providing knowledge about techniques and applications of modeling and simulation of logistics processes and using the acquired knowledge in practice using a dedicated simulation application.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_K01] recognizes the importance of knowledge related to the field of study in solving cognitive and practical problems	Ability to independently formulate research problems			[SK5] Assessment of ability to solve problems that arise in practice		
	[K7_U06] develops their potential using their own initiative and experience, taking personal responsibility for striving to achieve their goals and increasing opportunities for personal development as well as those of their colleagues	Ability to independently acquire practical skills using available data sources			[SU4] Assessment of ability to use methods and tools		
	[K7_U05] cooperates with other people in the implementation of team work, both as a leader and a team member, effectively achieving set goals	The ability to jointly develop assumptions for solving a design problem.			[SU1] Assessment of task fulfilment		
	[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 identify problematic issues in the project task being carried out			[SW3] Assessment of knowledge contained in written work and projects		
Subject contents	<ol style="list-style-type: none"> 1. Definition of simulation and modeling 2. Characteristics of operating systems 3. Principles of execution, examples and advantages of simulation 4. Simulation users 5. Simulation procedure 6. Simulation of queuing systems 7. Discrete event simulation 						
Prerequisites and co-requisites	Basic knowledge of the functioning of logistics systems						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Practical work	60.0%	50.0%
	Lecture - test	60.0%	50.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"> 1. A. M. Law, <i>Simulation Modeling and Analysis</i>. McGrawHill Education, 2015 2. K. A. Jurczyk, <i>Flexsim. Podręcznik użytkownika</i>. Intermarium, 2024 3. A. G. GreenWood, <i>Simulation Primer</i>, FlexSim, 2019 4. A. G. GreenWood, <i>Simulation Software Primer</i>, FlexSim, 2020 	
	Supplementary literature	Actual industry-related literature	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. Basics of 3D mode 2. Creating element flow lo 3. gic Defining parameters of objects in the model 4. Model of a quality control station 5. Model of the conveyor system 		
Work placement	Not applicable		

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