



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						
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_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		
	[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 interpret simulation results and identify their causes.		[SU2] Assessment of ability to analyse information		
	[K7_K02] makes competent and ethical decisions, caring for the public interest and maintaining economic, social and environmental values		Ability to identify the possibilities of using simulation in various practical applications		[SK5] Assessment of ability to solve problems that arise in practice		
Subject contents	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
	Lecture - test	60.0%	50.0%
	Practical work	60.0%	50.0%
Recommended reading	Basic literature	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	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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