GDAŃSK UNIVERSITY OF TECHNOLOGY

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_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
[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_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_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_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

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

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Lecture - test</td><td>60.0%</td><td>50.0%</td></tr>
<tr><td>Practical work</td><td>60.0%</td><td>50.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>1. A. M. Law, Simulation Modeling and Analysis. McGrawHill Education, 2015
2. K. A. Jurczyk, Flexsim. Podręcznik użytkownika. Intermarium, 2024
3. A. G. GreenWood, Simulation Primer, FlexSim, 2019
4. A. G. GreenWood, Simulation Software Primer, FlexSim, 2020</td></tr>
<tr><td>Supplementary literature</td><td>Actual industry-related literature</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">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</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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