GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Forecasting and optimization in logistics, PG_00069584		
Field of study	Forecasting and optimization in logistics		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	English
Semester of study	3	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Management Engineering and Quality -> Faculty of Management and Economics -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Mateusz Muchlado	
	Teachers	dr Mateusz Muchlado	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	30.0	0.0	0.0	45

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 46264 Forecasting and optimization in Logistics (Winter 25/26)
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=46264

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	4.0	26.0	75

Subject objectives

Mastering the knowledge and skills in the use of methods and tools enabling the analysis of logistics data and the design and implementation of optimization activities for key internal and external logistics processes.

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	Is able to independently conduct an analytical cycle, using appropriate tools for analyzing logistics data. Presents the obtained results in a professional and convincing manner, with a focus on interpreting business implications and proposing optimization proposals for logistics processes.	[SU4] Ocena umiejętności korzystania z metod i narzędzi
[K7_K01] recognizes the importance of knowledge related to the field of study in solving cognitive and practical problems	knows, understands, and explains key concepts, processes, and challenges of internal and external logistics in the context of enterprise decision-making. Demonstrates a thorough understanding of data analysis methods and tools, recognizing their critical importance in diagnosing and solving complex, practical problems in supply chains.	[SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce

<table>
<tr><td>Subject contents</td><td>1. Basics of logistics processes and management methods.
2. Basics of warehouse management, assortment organization strategies.
3. Naive methods in estimating warehouse demand.
4. Statistical methods for controlling logistics processes.
5. Risk management in logistics processes.
6. Strategies for allocating logistics resources within an enterprise.

1. Methods and tools for optimizing logistics processes.
2. Designing warehouse documentation and product organization strategies.
3. Using naive methods to estimate warehouse demand.
4. Statistical methods for controlling logistics processes.
5. Risk management in logistics processes.
6. Optimizing logistics processes using Lean Management methods and tools.
7. A simulation game for external transport processes and resource-based planning.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Basic knowledge of economics and management, statistics, knowledge of English.</td></tr>
<tr><td>Assessment methods and criteria</td><td><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>In-semester mini-project's</td><td>60.0%</td><td>60.0%</td></tr>
<tr><td>Written test</td><td>60.0%</td><td>40.0%</td></tr>
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<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>Multimedia presentation, available on the e-learning platform.

Additional materials available on the e-learning platform.</td></tr>
<tr><td>Supplementary literature</td><td>Fernie, John, and Leigh Sparks, eds. Logistics and retail management: emerging issues and new challenges in the retail supply chain. Kogan page publishers, 2018.

McKinnon, Alan, et al., eds. Green logistics: Improving the environmental sustainability of logistics. Kogan Page Publishers, 2015.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Choose the best inventory management strategy for your dairy wholesaler.

2. Choose the best demand forecasting system for seasonal products

3. Present a risk analysis for the selected procurement process

4. Propose a strategy for internal product logistics in the factory</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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