



## Subject card

Subject name and code	FORECASTING AND OPTIMIZATION IN LOGISTICS, PG_00037869						
Field of study	Management						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies	Subject group			Obligatory subject group in the field of study 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			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr Mateusz Muchlado					
	Teachers	dr Mateusz Muchlado mgr Anna Wendt					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	0.0	0.0	30
	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	30	2.0	18.0	50		
Subject objectives	<p>The aim of the course is to develop and implement solutions that increase the effectiveness and efficiency of individual processes or the overall Logistics system of the company, including</p> <ul style="list-style-type: none"> <li>- optimization of logistics costs</li> <li>- warehouse and production optimization</li> <li>- optimization of transport, transport costs</li> </ul>						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_K04] acts in accordance with the principles of building relations and managing processes and projects, organizing them for the benefit of the company and anticipating the consequences of decisions made	The student develops the social competence of individual and team work, acting for the prosperity of the organization.			[SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice		
	[K7_U02] analyses complex economic processes and phenomena using selected methods and techniques for analysing socio-economic data, and formulates their own opinions and conclusions concerning these processes and phenomena	The student applies the methods of forecasting and optimization in logistics for organizations, makes a project for the organization in the area of logistics with the use of methods of forecasting and optimization.			[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment		
	[K7_W07] knows in depth selected methods and techniques of data acquisition, enabling analysis and modelling of structures and socio-economic relations, processes taking place and their impact on the implementation of objectives of the organization, including government administration, local government and non-profit organizations	The student knows methods of forecasting and optimization and understands the importance of forecasting and optimization in rationalization of the logistics support for an organization.			[SW1] Assessment of factual knowledge		
	[K7_W11] has an in-depth knowledge of the creation, operation and design of management structures and systems and their improvement in the process of achieving objectives	The student knows the idea of the logistic processes and logistic systems in organizations.			[SW1] Assessment of factual knowledge		

Subject contents	<p>Logistics forecasting and optimization includes projects aimed at increasing the efficiency and effectiveness of the entire company's logistics processes, including procurement, production, storage and distribution. It can also refer to certain aspects of logistics, for example logistics costs or transport costs.</p> <ol style="list-style-type: none"> <li>1. Logistics management process maps: (supply, production, distribution, waste logistics)</li> <li>2. Technological card</li> <li>3. The effective working time for logistics operator</li> <li>4. The effective working time for production industrial robot</li> <li>5. Failure mode and effects analysis ( FMEA)</li> <li>6. Transport logistics symulations</li> <li>7. ABC method of management of raw materials</li> <li>8. Total Productive Maintenance</li> <li>9. Card risks in the workplace</li> </ol>														
Prerequisites and co-requisites	Basic knowledge of economics and management, English language usage														
Assessment methods and criteria	<table border="1" data-bbox="448 1010 1497 1151"> <thead> <tr> <th data-bbox="448 1010 794 1048">Subject passing criteria</th> <th data-bbox="794 1010 1141 1048">Passing threshold</th> <th data-bbox="1141 1010 1497 1048">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 1048 794 1086">Project</td> <td data-bbox="794 1048 1141 1086">55.0%</td> <td data-bbox="1141 1048 1497 1086">80.0%</td> </tr> <tr> <td data-bbox="448 1086 794 1124">Attendance at classes</td> <td data-bbox="794 1086 1141 1124">80.0%</td> <td data-bbox="1141 1086 1497 1124">10.0%</td> </tr> <tr> <td data-bbox="448 1124 794 1151">Activity at classes</td> <td data-bbox="794 1124 1141 1151">50.0%</td> <td data-bbox="1141 1124 1497 1151">10.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Project	55.0%	80.0%	Attendance at classes	80.0%	10.0%	Activity at classes	50.0%	10.0%
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Recommended reading	<p>Basic literature</p> <p>Supplementary literature</p> <p>eResources addresses</p>	<p>B. S. Blanchard: Logistics Engineering and Management. Prentice Hall, New Jersey 1998  A. Yalaoui, Hi. Chehade, F. Yalaoui, L. Amodeo: Optimization of Logistics (ISTE), Kindle Edition 2013  G. D. Eppen, F. J.Gould, C. P.Schmidt, J. H. Moore, L. R. Weatherford: Introductory Management Science Decision Modelling with Spreadsheets. Prentice Hall, New Jersey 1998.</p> <p>R. H. Ballou: Basic Business Logistics. Prentice Hall, New York 1987  G. J. Plenert: Supply Chain Optimization through Segmentation and Analytics (Resource Management), CRC Press, 2014  S. G. Powell, K. R. Bake: Management Science: The Art of Modeling with Spreadsheets, John Wiley and Sons, 2010  D. Simchi-Levi, P. Kaminsky, E. Simchi-Levi: Designing and managing the supply chain. Irwin McGraw - Hill, International Editions 2000</p>													
Example issues/ example questions/ tasks being completed	Logistics management process maps: (supply Logistics , production Logistics , distribution, waste logistics)														
Work placement	Not applicable														