University of Gdańsk

Subject card

Subject name and code	Managerial Decisions in Logistics, PG_00200431						
Field of study	Logistics and Mobility						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2026/2027			
Education level	Master's 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	1		Language of instruction	English			
Semester of study	1		ECTS credits	3.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Faculty of Economics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Leszek Reszka				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	30.0	0.0	30.0	0.0	60
	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	60		0.0	15.0	75	
Subject objectives	The aim of the subject is to acquaint students with decision support methods used in logistics and to acquire practical skills for their use.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[LMMU2_W08] has a knowledge of main and logistics processes occurring in enterprises and economic organisations and with related areas, as well as of processes of change in public institutions; knows methods of research on the regularities governing these changes, taking into account the influence of external stakeholders on them	a student has an in-depth knowledge of main and logistics processes taking place in enterprises and economic organizations	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[LMMU2_U13] can manage teamwork as well as interact and work in a team (including in an international environment) assuming a leading role in it	a student is able to work in a team, taking a leading role in it	[SU2] presentation/project/paper/ report
[LMMU2_W06] has an in-depth knowledge of statistical and econometric methods and tools for description and macro- and microeconomic modelling of logistics and mobility processes and systems	a student knows methods and tools for modeling decision problems related to logistics	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[LMMU2_K03] inspires and organises preparation of projects in the field of logistics and mobility, following the idea of sustainable development, reconciling legal, economic, ecological, political and social requirements	student organizes the preparation of projects in the field of logistics, following the idea of sustainable development, reconciling legal, economic, ecological, political and social requirements; the projects are discussed and approved during duty hours with the teacher	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK8] observation of student's independent or team work
[LMMU2_W02] has a knowledge of various types of economic entities and organisations, which require logistics support or provide logistics services as well as an extended knowledge of public institutions	a student has in-depth knowledge of different types of business entities and organizations that require logistics support or provide logistics services	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[LMMU2_W09] has an in-depth knowledge of the evolution of theories describing logistics and mobility	a student has in-depth knowledge of the evolution of theories characterizing logistics	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[LMMU2_W01] has an in-depth knowledge of the nature of social sciences and their place in the system of sciences; understands the differences between contemporary trends in theory of logistics and mobility	a student has an in-depth knowledge and understanding of the differences between contemporary trends in logistics theory	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[LMMU2_U04] can forecast and model complex economic and social processes, as well as logistics and mobility processes and systems using quantitative and qualitative methods and tools developed by economic sciences (including statistics and econometrics)	a student is able to build decision models to solve decision problems related to logistics using quantitative and qualitative methods and tools developed by economic sciences	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work

Subject contents	1) Introduction to Managerial Decision-Making in Logistics the essence of the logistics support system, areas of managerial decisions in logistics, team project on the logistics support system of a selected business entity 2) The essence of an optimization model optimization vs. sub-optimization, decision-making process in the enterprise, models in the enterprise, types of models, examples of models, decision models, components of a decision model, stages of building a decision-making model, example of an optimization model construction, 3) Theory of linear programming features of linear programming models, construction of a logistics optimization model, algorithm for using the SOLVER tool, possibilities of using the SOLVER tool. 4) Examples of linear programming models optimal selection of product assortment, integer linear programming, other possible constraints in linear programming, mixture problem, graphical method of solving linear programming model, duality in linear programming, transportation model, balanced and unbalanced transportation model, blocked road problem in transportation model, transshipment model, assignment model 5) Network programming theory selected concepts of graph theory, graphical illustration of graphs 6) Examples of network programming models transport model with transshipment, shortest route model, equipment replacement model, maximum flow model 7) Team project on the application of optimization methods in the logistics of a selected business entity
Prerequisites and co-requisites	
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
active participation in classes (extra points possible)	0.0%	0.0%
Test	51.0%	70.0%
Projects	51.0%	30.0%

<table>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>Used in the classroom:

• L. Reszka, Decision Making Process in the Management of Logistics Support System [w:] C. Mańkowski, L. Reszka (ed.): Modelowanie procesów i systemów logistycznych, cz. XXII Wydawnictwo Uniwersytetu Gdańskiego, Gdansk 2021, s. 167-176
• A.Yalaoui, H.Chehade, F.Yalaoui, L.Amodeo, Optimization of logistics, Wiley, Hoboken 2012

Studied by the student independently:

• S. G.Powell, K. R.Bake: Management Science: The Art of Modeling with Spreadsheets, John Wiley and Sons, 2010
• G. J. Plenert, Supply Chain Optimization through Segmentation and Analytics (Resource Management), CRC Press, 2014
• G. Richards, S. Grinsted, The Logistics and Supply Chain Toolkit, Kogan Page, 2020
• T. Miller, M. J. Liberatore, Logistics Management: An Analytics-Based Approach, Business Expert Press, 2020
• B.S. Blanchard, Logistics Engineering & Management, Pearson UK, 2014
• G. Ghiani, G. Laporte, R. Musmanno, Introduction to Logistics Systems Management, Wiley 2013</td></tr>
<tr><td>Supplementary literature</td><td>• L. Reszka, Multicriteria optimization methods in logistics on the example of warehouse location, "Journal of Positive Management", vol. 9, nr 3/2018, Torun 2018, ISSN: 2083-103X, p. 3-16
• L. Reszka, The Applicability of the Simos Method to Determination of Weights In Optimal Multicriteria Decision Making in Logistics [W:] M. Chaberek, L. Reszka (ed.): Modelling of Logistics Processes and Systems, part XVII Research Journal of the University of Gdańsk Transport Economics and Logistics vol. 66. Gdańsk University Press, Gdańsk 2017, s. 81-88</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">-</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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