

**Subject card**

<b>Subject name and code</b>	Managerial Decisions in Logistics, PG_00153798						
<b>Field of study</b>	Logistics and Mobility						
<b>Date of commencement of studies</b>	October 2024	<b>Academic year of realisation of subject</b>			2024/2025		
<b>Education level</b>	postgraduate studies	<b>Subject group</b>			Obligatory subject group in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	1	<b>Language of instruction</b>			English English		
<b>Semester of study</b>	1	<b>ECTS credits</b>			3.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>					
<b>Conducting unit</b>	Faculty of Economics						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Leszek Reszka				
	<b>Teachers</b>		dr Leszek Reszka				
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	30.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	30		0.0		0.0	30
<b>Subject objectives</b>	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_W02] has an in-depth 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_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	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK8] observation of student's independent or team work
	[LMMU2_W06] knows 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_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_W08] has an in-depth 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_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
	[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_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

<b>Subject contents</b>	<p>1) Managerial decision-making process in logistics</p> <p>the essence of the logistics support system, areas of managerial decisions in logistics, 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,</p> <p>2) Theory of linear programming</p> <p>features of linear programming models, construction of a logistics optimization model, algorithm for using the SOLVER tool, possibilities of using the SOLVER tool.</p> <p>3) Examples of linear programming models</p> <p>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</p> <p>4) Network programming theory</p> <p>selected concepts of graph theory, graphical illustration of graphs</p> <p>5) Examples of network programming models</p> <p>transport model with transshipment, shortest route model, equipment replacement model, maximum flow model</p>														
<b>Prerequisites and co-requisites</b>															
<b>Assessment methods and criteria</b>	<table border="1"> <thead> <tr> <th data-bbox="453 1140 794 1167">Subject passing criteria</th> <th data-bbox="799 1140 1141 1167">Passing threshold</th> <th data-bbox="1145 1140 1493 1167">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="453 1173 794 1227">active participation in classes (extra points possible)</td> <td data-bbox="799 1173 1141 1227">0.0%</td> <td data-bbox="1145 1173 1493 1227">0.0%</td> </tr> <tr> <td data-bbox="453 1234 794 1261">Projects</td> <td data-bbox="799 1234 1141 1261">51.0%</td> <td data-bbox="1145 1234 1493 1261">30.0%</td> </tr> <tr> <td data-bbox="453 1267 794 1294">Test</td> <td data-bbox="799 1267 1141 1294">51.0%</td> <td data-bbox="1145 1267 1493 1294">70.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	active participation in classes (extra points possible)	0.0%	0.0%	Projects	51.0%	30.0%	Test	51.0%	70.0%
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Recommended reading	Basic literature	Used in the classroom: <ul style="list-style-type: none"> <li>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</li> <li>A.Yalaoui, H.Cehade, F.Yalaoui, L.Amodeo, <i>Optimization of logistics</i>, Wiley, Hoboken 2012</li> </ul> <p>Studied by the student independently:</p> <ul style="list-style-type: none"> <li>S. G.Powell, K. R.Bake: <i>Management Science: The Art of Modeling with Spreadsheets</i>, John Wiley and Sons, 2010</li> <li>G. J. Plenert, <i>Supply Chain Optimization through Segmentation and Analytics (Resource Management)</i>, CRC Press, 2014</li> <li>G. Richards, S. Grinsted, <i>The Logistics and Supply Chain Toolkit</i>, Kogan Page, 2020</li> <li>T. Miller, M. J. Liberatore, <i>Logistics Management: An Analytics-Based Approach</i>, Business Expert Press, 2020</li> <li>B.S. Blanchard, <i>Logistics Engineering &amp; Management</i>, Pearson UK, 2014</li> <li>G. Ghiani, G. Laporte, R. Musmanno, <i>Introduction to Logistics Systems Management</i>, Wiley 2013</li> </ul>
	Supplementary literature	<ul style="list-style-type: none"> <li>L. Reszka, <i>Multicriteria optimization methods in logistics on the example of warehouse location</i>, "Journal of Positive Management", vol. 9, nr 3/2018, Torun 2018, ISSN: 2083-103X, p. 3-16</li> <li>L. Reszka, <i>The Applicability of the Simos Method to Determination of Weights In Optimal Multicriteria Decision Making in Logistics</i> [W:] M. Chaberek, L. Reszka (ed.): <i>Modelling of Logistics Processes and Systems, part XVII</i> Research Journal of the University of Gdańsk Transport Economics and Logistics vol. 66. Gdańsk University Press, Gdańsk 2017, s. 81-88</li> </ul>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	-	
Work placement	Not applicable	

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