

Subject card

Subject name and code	Lean Six Sigma, PG_00153806						
Field of study	Logistics and Mobility						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2024/2025		
Education level	postgraduate studies	Subject group			Obligatory subject group 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	2	ECTS credits			2.0		
Learning profile	academic	Assessment form					
Conducting unit	Katedra Logistyki -> Faculty of Economics -> Rektor						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Agnieszka Szmelter-Jarosz				
	Teachers		dr Agnieszka Szmelter-Jarosz				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
	Additional information: Working in a computer laboratory						
	Case studies						
Data analysis							
Discussion							
Simulation of business processes							
Individual and group work							
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	15		0.0		0.0	15

Subject objectives	<p>Familiarizing students with logistics management techniques used in international corporations (some of the techniques are also appropriate for the area of quality management).</p> <p>Familiarizing students with the most popular tools used in the field of logistics process engineering.</p> <p>Familiarizing students with qualitative and quantitative methods of assessing logistics processes within the Six Sigma and lean management methodology.</p> <p>Acquisition by students of practical skills in the use of Lean Six Sigma techniques, especially data analysis</p>		
Learning outcomes	Course outcome	Subject outcome	Method of verification
	[LMMU2_U05] uses (legal, professional, ethical) normative systems and can effectively solve complex economic and social problems in logistics and mobility using them	The student is able to apply the known methods, techniques and tools to solve the problem. The student analyses quantitative and qualitative data in order to identify the problem, its causes and how to solve it	[SU5] implementation of a problem task [SU8] observation of student's independent or team work
	[LMMU2_W11] knows the detailed principles of establishing and developing forms of individual entrepreneurship, using the knowledge of economics, finance, management, logistics and mobility	The student knows the basic elements of the Lean Six Sigma methodology. The student has in-depth knowledge of the methods, techniques and tools used in business process engineering, including those used in Lean Six Sigma	[SW4] test/exam - oral or written
	[LMMU2_K04] is ready to think and act in an entrepreneurial manner; adapts to new situations and conditions; undertakes challenges of creative thinking; acquires resilience to failures; can assess risks and threats and find ways of counteracting their effects	The student solves complex problems in the field of business process engineering. The student is able to work in a group to solve a problem	[SK5] implementation of a problem task [SK8] observation of student's independent or team work
	[LMMU2_W10] knows the terms and principles of protection of industrial property and copyright, and understands the necessity of management of intellectual property resources	The student knows the principles of business process management based on lean management	[SW4] test/exam - oral or written
	[LMMU2_U15] can independently expand and improve acquired knowledge and skills in logistics and mobility; is open to new ideas and techniques; tends to learn using any accessible method and to interact with other participants of the learning process	The student is able to choose the method, technique and tools to solve the problem in the field of business process engineering based on the Lean Six Sigma methodology	[SU5] implementation of a problem task [SU8] observation of student's independent or team work

Subject contents	<p>1. Lean Management and Kaizen - introduction</p> <p>2. Types of waste</p> <p>3. Value stream mapping and map analysis</p> <p>4. Overview of tools and techniques (Kanban, Poka Yoke, Jidoka, 5S, QFD, others)</p> <p>5. DMAIC cycle</p> <p>6. Define phase - SIPOC, VoC</p> <p>7. Measure phase - measures, CtQ, variable measurements</p> <p>8. Analyze phase - introduction, typical tools and methods of data analysis (Pareto diagram, FMEA analysis, statistical analysis), evaluation of process stability, data distribution, process capability, correlation, regression, data stratification and segmentation</p> <p>9. Improve phase - introduction, DOE, techniques of generating ideas, planning and implementing improvements, standardization of the process</p> <p>10. Control phase - introduction, control cards, process auditing</p> <p>11. Final test</p>											
Prerequisites and co-requisites	<p>A. Formal requirements</p> <p>The positive grade obtained from the subject:</p> <p>Managerial Decisions in Logistics</p> <p>B. Prerequisites</p> <p>Basic knowledge of logistics and business processes</p> <p>Computer skills in a Windows environment</p> <p>Basic knowledge of MS Excel</p>											
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="453 1594 794 1624">Subject passing criteria</th> <th data-bbox="799 1594 1141 1624">Passing threshold</th> <th data-bbox="1145 1594 1490 1624">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="453 1630 794 1659">assessments of tasks</td> <td data-bbox="799 1630 1141 1659">51.0%</td> <td data-bbox="1145 1630 1490 1659">50.0%</td> </tr> <tr> <td data-bbox="453 1666 794 1688">test</td> <td data-bbox="799 1666 1141 1688">51.0%</td> <td data-bbox="1145 1666 1490 1688">50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	assessments of tasks	51.0%	50.0%	test	51.0%	50.0%
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Recommended reading	Basic literature	<p>Szmelter A., The impact of complexity on shaping logistics strategies in global supply chains, Journal of Economics & Management, 2017, Vol. 28, no. 2, s. 74-89.</p> <p>Harry M., Schoeder R., Six Sigma: The Breakthrough Management Strategy Revolutionizing the World's Top Corporations, Currency, 2006 (first and next editions)</p> <p>Peter S. Pande, Robert P. Neuman, and Roland Cavanagh, The Six Sigma Way: How to Maximize the Impact of Your Change and Improvement Efforts, McGraw Hill; 2nd edition (January 7, 2014)</p>										

	Supplementary literature	The Council for Six Sigma Certification, Six Sigma: A Complete Step-by-Step Guide: A Complete Training & Reference Guide for White Belts, Yellow Belts, Green Belts, and Black Belts, 2018
	eResources addresses	Adresy na platformie eNauzanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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