

Subject card

Subject name and code	Lean Six Sigma, PG_00174105						
Field of study	Logistics and Mobility						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Master's 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		credit		
Conducting unit	Department of Logistics -> Faculty of Economics -> Rector						
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						
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		12.0		23.0	50
Subject objectives	Familiarizing students with logistics management techniques used in international corporations (some of the techniques are also appropriate for the area of quality management).						
	Familiarizing students with the most popular tools used in the field of logistics process engineering.						
	Familiarizing students with qualitative and quantitative methods of assessing logistics processes within the Six Sigma and lean management methodology.						
	Acquisition by students of practical skills in the use of Lean Six Sigma techniques, especially data analysis						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[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
	[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_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
Subject contents	1. Lean Management and Kaizen - introduction 2. Types of waste 3. Value stream mapping and map analysis 4. Overview of tools and techniques (Kanban, Poka Yoke, Jidoka, 5S, QFD, others) 5. DMAIC cycle 6. Define phase - SIPOC, VoC 7. Measure phase - measures, CtQ, variable measurements 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 9. Improve phase - introduction, DOE, techniques of generating ideas, planning and implementing improvements, standardization of the process 10. Control phase - introduction, control cards, process auditing 11. Final test Any doubts regarding the issues discussed will be dispelled during the consultation.		

Prerequisites and co-requisites	A. Formal requirements		
	The positive grade obtained from the subject:		
	Managerial Decisions in Logistics		
	B. Prerequisites		
	Basic knowledge of logistics and business processes		
	Computer skills in a Windows environment		
	Basic knowledge of MS Excel		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	51.0%	50.0%
	assessments of tasks	51.0%	50.0%
Recommended reading	Basic literature	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.	
		Harry M., Schoeder R., Six Sigma: The Breakthrough Management Strategy Revolutionizing the World's Top Corporations, Currency, 2006 (first and next editions)	
		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)	
	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		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

Document generated electronically. Does not require a seal or signature.