



## Subject card

Subject name and code	, PG_00054586						
Field of study	Engineering Management						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2023/2024		
Education level	first-cycle studies		Subject group		Optional subject group 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	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Katedra Inżynierii Zarządzania i Jakości -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Ewa Marjańska				
	Teachers		dr inż. Ewa Marjańska				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45
	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	45		4.0		26.0	75
Subject objectives	The aim of the Lean Manufacturing course is to develop students' ability to use toolsLean Manufacturing to eliminate key challenges in production processes.The aim of the theoretical material (lectures) is to familiarize students with the problems that arise inproduction processes and how the presented tools help in solving themThe aim of the exercises is to support students in developing skills and using various toolsprocesses and situations.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W13] has a basic knowledge of the design, modelling and optimisation of technical processes and systems		The student has basic knowledge of scope of application of tools Lean Manufacturing to be eliminated key process challenges production.		[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	[K6_U08] analyses engineering and managerial solutions in decision-making processes, taking into account pro-quality and pro-environmental aspects, as well as safety of work processes		The student is able to design solutions using indicated methods and tools Lean Manufacturing.		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
Subject contents	1. Basic concepts related to Lean Manufacturing2.Problem solving3. 5S - involvement in noticing and eliminating waste4. Gemba Walk - identifying problems in processes5. Standardization of work6. Milk run - organization of supplying materials to stations7. Poka-yoke - right the first time8. SMED - shortening changeover times9. Kamishibai - layered auditing of standards10. One point lesson - communication of changes in processes						

Prerequisites and co-requisites	The student should complete the subject of Production Management;		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	mini projects	60.0%	60.0%
	exam	60.0%	20.0%
	passing an e-learning course	75.0%	10.0%
	activity and punctuality	70.0%	10.0%
Recommended reading	Basic literature	1. "The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer" Jeffrey Liker.  2. "Lean Thinking: Banish Waste and Create Wealth in Your Corporation" James P. Womack, Daniel T. Jones.  3. "Lean Production Simplified: A Plain-Language Guide to the World's Most Powerful Production System" Pascal Dennis.	
	Supplementary literature	Seria książek Shopfloor wydawnictwa Productivity Press	
	eResources addresses	Podstawowe <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=35037">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=35037</a> - E-nauczanie course Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Use the tool in relation to the given problem in the form of a case study		
Work placement	Not applicable		