



Subject card

Subject name and code	, PG_00054586						
Field of study	Engineering Management						
Date of commencement of studies	October 2020	Academic year of realisation of subject				2022/2023	
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. Joanna Czerska				
	Teachers		dr inż. Joanna Czerska				
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						
Lean Manufacturing_Joanna Czerska_lato 2023 - Moodle ID: 24555 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=24555							
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 purpose of the Lean Manufacturing course is to develop students' ability to use Lean Manufacturing tools to eliminate key challenges in manufacturing processes. The purpose of the theoretical material (lectures) is to introduce students to the problems that arise in manufacturing processes and how the tools presented help solve them. The purpose of the exercises is to support students in developing their skills, using the tools for a variety of processes and situations.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[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 the indicated Lean Manufacturing methods and tools		[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		
	[K6_W13] has a basic knowledge of the design, modelling and optimisation of technical processes and systems		The student has a basic knowledge of how to apply Lean Manufacturing tools to eliminate key challenges in manufacturing processes.		[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
Subject contents	<ol style="list-style-type: none"> 1. Basic concepts related to Lean Manufacturing 2. Problem solving 3. 5S - engaging in spotting and eliminating waste 4. Gemba Walk - identifying problems in processes 5. Work Standardization 6. Milk run - organizing the supply of materials to workstations 7. Poka-yoke - getting it right the first time 8. SMED - reducing changeover times 9. Kamishibai - layering auditing standards 10. One point lesson - communicating changes in processes 						
Prerequisites and co-requisites	The student should pass the subject Production Management; it would be desirable for the student to complete the elective class Lean Management						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Proactivity and punctuality	70.0%	10.0%
	E-learning course credit	75.0%	10.0%
	Exam	60.0%	20.0%
	MIni projects	60.0%	60.0%
Recommended reading	Basic literature	Czerska J, Podstawowe narzędzia Lean Manufacturing, LeanQ Team, 2014	
		Czerska J, Doskonalenie strumienia wartości, wyd 2, LeanQ Team, 2014	
		Czerska J (red.) Poradnik Młodego Lean Lidera, Lean Education, 2019	
	Supplementary literature	Shopfloor book series from Productivity Press publishing house	
eResources addresses			
Example issues/ example questions/ tasks being completed	Use the tool in relation to the problem posed in the form of a case study.		
Work placement	Not applicable		