



## Subject card

Subject name and code	Production improvement methods and techniques, PG_00055245						
Field of study	Management and Production Engineering						
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	5	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład Technologii Maszyn i Automatykacji Produkcji -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Sławomir Szymański					
	Teachers	dr inż. Sławomir Szymański					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	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		2.0		8.0	25
Subject objectives	Improving production processes brings measurable effects, not only economic (financial). Its effect may be the reduction and optimization of costs, improvement of work quality, increase in efficiency and productivity, improvement of communication and improvement of efficiency and effectiveness of operations.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_K02] is able to interact and work in a group, assuming different roles, can inspire and organize the learning process of others, properly identifies priorities for realization of a task specified by themselves or others	The student is able to use the acquired knowledge in the field of team building to create an effective team of employees. The student uses dedicated methods of motivating to manage the work of the team, motivating employees and resolving conflicts. The student assumes the role of a leader and uses appropriate tools to improve communication in the team, increase the effectiveness of the team's work and build the image of the team within the organization and environment.	[SK3] Assessment of ability to organize work [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills [SK2] Assessment of progress of work
	[K6_U03] is able to communicate using various techniques in the professional environment and other environments, has language skills enabling free communication in the field of technical sciences related thematically to management and production engineering	The student is able to develop reports, procedures and instructions using the principles of standardization and visualization and in compliance with the principles, methods and tools of information and communication techniques. The student is able to formulate statements and messages in a manner adapted to the level of thematic apperception of the recipient. At the same time, the student freely uses technical and industry vocabulary in the areas of the analyzed problems, expressing himself freely in Polish and English.	[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task
	[K6_W11] knows and understands the basic concepts and principles of the protection of industrial property and copyright law, can use the resources of patent information	The student knows and understands the basic concepts and principles of the protection of industrial property and copyright, is able to use the resources of patent information and institutional support in the field of intellectual property protection.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
Subject contents	<ul style="list-style-type: none"> <li>• Introduction to the course</li> <li>• Evaluation of improvement approach - comparison of approach of H. Forda vs Toyota</li> <li>• Lean philosophy</li> <li>• VSM5S i standaryzacja pracy</li> <li>• Kanban system</li> <li>• Setup time reduction using SMED</li> <li>• TPM</li> <li>• OEE</li> <li>• Autonomus Managment</li> <li>• Planned Maintenance</li> <li>• Six Sigma concept and i DMAIC</li> <li>• Steps D, M, A, I, C and tools</li> </ul>		
Prerequisites and co-requisites	knowledge of basic problem solving tools		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	egzam 1hour	60.0%	100.0%
Recommended reading	Basic literature	1. Goldratt Eliyahu M. - Cel. Doskonałość w produkcji  2. Womack James P., Jones D. T. - Odchudzenie firm  3. Liker Jeffrey K. - Droga Toyoty	
	Supplementary literature	4. Imai Masaaki - Gemba Kaizen  5. Hines Peter, Taylor David - Organizacja Lean	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			

Work placement	Not applicable
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