



## Subject card

Subject name and code	Production Management, PG_00040564						
Field of study	Engineering Management						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2021/2022		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			blended-learning		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department of Industrial Management -> 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	30.0	0.0	0.0	15.0	0.0	45
	E-learning hours included: 30.0						
	Address on the e-learning platform: <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=7999">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=7999</a> Adresy na platformie eNauczanie:						
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		7.0		48.0	100
Subject objectives	The aim of the course is to acquire knowledge about modern production management systems, designing simple production processes, improving production processes and managing them.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_K02] identifies problems related to undertaking various tasks, including engineering in the changing conditions of the organisation's functioning; takes into account the ethical aspect related to the implementation of the organisation's tasks	The student working in team projects is able to make decisions taking into account the needs of the members of this team in the face of the set goals and challenges that the team faces.	[SK1] Assessment of group work skills
	[K6_W08] has a basic knowledge of the changes taking place in the organisation and its environment, taking into account environmental problems	Student knows the current trends in production management. Can make decisions based on operational indicators. He knows the needs and requirements for environmental management in the enterprise	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
	[K6_W12] has a basic knowledge of production management and occupational safety and ergonomics management, as well as information technologies necessary for engineering management	The student knows the main goals and criteria for the evaluation of production processes. He knows how to organize the production process based on customer requirements and product design. He knows the key elements of occupational and environmental safety management. He knows the role of Excel, ERP and MES in managing the production process	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge
	[K6_W02] has a basic knowledge of the different types of departments in the organisation, with particular emphasis on structures of an engineering nature	The student knows the essence of modern production management systems. Uses basic methods and tools for designing simple production processes, process improvement and production management.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge
	[K6_U11] can plan and control production and production quality, including the identification and formulation of specifications for simple engineering tasks	The student is able to choose the method of controlling the flow of customer orders to the specificity of these orders. The student understands how the lack of process and product quality affects the losses on production efficiency and is able to assess this impact	[SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task
Subject contents	<p>Introduction</p> <p>Basic concepts related to production management</p> <p>Organization of the flow of information and materials in production processes with elements of logistics management in production</p> <p>Production management concepts and current trends in production management</p> <p>Basics of maintenance management. Total Productive Maintenance</p> <p>Product design and technology</p> <p>R&amp;D input: product design and bill of materials</p> <p>Input data from the technological department: technological operations, labor consumption of the product, list of machines</p> <p>Manufacturing process map. Worker, machine and product cycle time</p> <p>Designing production capacities taking into account seasonal demand.</p> <p>Customer tact calculation</p> <p>Calculation of the number of employees taking into account holidays and absenteeism</p> <p>Managing production efficiency.</p> <p>Analysis of efficiency and losses on efficiency (OEE, Pareto loss).</p> <p>Managing production flexibility. Techniques for increasing the flexibility of production</p> <p>Flexibility Calculation (EPE) for position and process</p> <p>Rules for determining the minimum production batch (MOQ and EOQ)</p> <p>Designing the flow</p> <p>Employee Load Analysis and Balancing (Yamazumi)</p> <p>Principles of designing a production cell</p> <p>Employee competency management</p> <p>Competency matrices, methods for assessing the complexity of competences, planning the employee development path.</p> <p>Classification of work at the workplace.</p> <p>Job classification and levels of competences.</p> <p>Verification of employee knowledge and skills</p> <p>Standardization of work.</p> <p>Types of work standards and principles of building standards</p> <p>On-the-job training. Instructional methods and principles of instruction</p> <p>Indicators (KPIs) in production management.</p> <p>Where do they come from and why are they important. How to obtain data for the calculation of indicators.</p> <p>Visual performance management.</p> <p>Designing the agenda of visual meetings</p> <p>Principles of monitoring losses at workplaces</p> <p>Environmental aspects in production</p>		

Prerequisites and co-requisites	Knowledge of Excel at an intermediate level		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test Exam	60.0%	30.0%
	Participation in project	60.0%	50.0%
	Test	70.0%	20.0%
Recommended reading	Basic literature	<p>Goldratt E., Cox J.: Cel 1. Doskonałość w produkcji., Mint Books, 2008</p> <p>Liker J.K.: Droga Toyoty. 14 zasad zarządzania wiodącej firmy produkcyjnej świata, MT Biznes, 2016</p> <p>Czerska J., Pozwól płynąć swojemu produktowi, Placet, 2011</p>	
	Supplementary literature	Parmenrer D. Kluczowe wskaźniki efektywności (KPI). Tworzenie, wdrażania i stosowanie. Wyd 3, One press, 2016	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>Designing a product according to customer requirements, designing the manufacturing process, managing the results of the production process; designing the production control system taking into account the stocks in the production process.</p>		
Work placement	Not applicable		