GDAŃSK UNIVERSITY OF TECHNOLOGY

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: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=7999
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

Introduction
Basic concepts related to production management
Organization of the flow of information and materials in production processes with elements of logistics management in production
Production management concepts and current trends in production management
Basics of maintenance management. Total Productive Maintenance
Product design and technology
R&D input: product design and bill of materials
Input data from the technological department: technological operations, labor consumption of the product, list of machines
Manufacturing process map. Worker, machine and product cycle time
Designing production capacities taking into account seasonal demand.
Customer tact calculation
Calculation of the number of employees taking into account holidays and absenteeism
Managing production efficiency.
Analysis of efficiency and losses on efficiency (OEE, Pareto loss).
Managing production flexibility. Techniques for increasing the flexibility of production
Flexibility Calculation (EPE) for position and process
Rules for determining the minimum production batch (MOQ and EOQ)
Designing the flow
Employee Load Analysis and Balancing (Yamazumi)
Principles of designing a production cell
Employee competency management
Competency matrices,
methods for assessing the complexity of competences,
planning the employee development path.
Classification of work at the workplace.
Job classification and levels of competences.
Verification of employee knowledge and skills
Standardization of work.
Types of work standards and principles of building standards
On-the-job training. Instructional methods and principles of instruction
Indicators (KPIs) in production management.
Where do they come from and why are they important. How to obtain data for the calculation of indicators.
Visual performance management.
Designing the agenda of visual meetings
Principles of monitoring losses at workplaces
Environmental aspects in production

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="3">Knowledge of Excel at an intermediate level</td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Test Exam</td><td>60.0%</td><td>30.0%</td></tr>
<tr><td>Participation in project</td><td>60.0%</td><td>50.0%</td></tr>
<tr><td>Test</td><td>70.0%</td><td>20.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Goldratt E., Cox J.: Cel 1. Doskonałość w produkcji., Mint Books, 2008

Liker J.K.: Droga Toyoty. 14 zasad zarządzania wiodącej firmy produkcyjnej świata, MT Biznes, 2016

Czerska J., Pozwól płynąć swojemu produktowi, Placet, 2011</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">Parmenrer D. Kluczowe wskaźniki efektywności (KPI). Tworzenie, wdrażania i stosowanie. Wyd 3, One press, 2016</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">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.</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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