GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	MODERN CONCEPTS OF PRODUCTION MANAGEMENT, PG_00070764		
Field of study	Engineering Management		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
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	7.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Management Engineering and Quality -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Ewa Marjańska	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	60.0	0.0	0.0	0.0	75

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	75	3.0	97.0	175

Subject objectives

preparation of students to formulate and implement innovative production management concepts based on knowledge of contemporary methods and approaches to managing production processes, while fostering attitudes of creativity and entrepreneurship in designing organisational solutions within the production environment.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K03] is prepared to critically assess the knowledge they possess, which is necessary for solving cognitive and practical problems, and to supplement any gaps with opinions from external experts.	is ready to critically assess proposed production management solutions by confronting them with current knowledge, best practices, and expert opinions, while demonstrating creativity and entrepreneurial thinking in designing organisational improvements.	[SK1] Assessment of group work skills [SK3] Assessment of ability to organize work [SK5] Assessment of ability to solve problems that arise in practice
[K6_W07] knows and understands advanced methods for analyzing the management process in technical, legal, economic, financial, and social contexts.	knows and understands contemporary production management concepts and methods, as well as the interrelationships between technological, organisational, and logistical processes, and is able to explain their impact on the efficiency and flexibility of production systems.	[SW3] Assessment of knowledge contained in written work and projects
[K6_U05] designs innovative solutions for complex management processes by utilizing appropriate methods and techniques.	is able to design the implementation of innovative production management processes, selecting methods that ensure high efficiency of production operations.	[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

Subject contents

Course content – lecture

Lean manufacturing

1. Basic concepts related to Lean Manufacturing
2. Problem solving
3. 5S - engaging in the perception and elimination of waste
4. Gemba Walk - identifying problems in processes
5. Standardization of work
6. Milk run - organization of supplying stations with materials
7. Poka-yoke - right the first time
8. SMED - shortening changeover times
9. Kamishibai - layered standards auditing
10. One point lesson - communication of changes in processes

Quick Response manufacturing

1. VUCA world
2. Quick Response Manufacturing pillars
3. White and gray times
4. Construction of MCT maps
5. Creating cells based on FTMS
6. Quick Response Office Center
7. Quick Response Cell

Course content – exercises

Lean manufacturing

1. Basic concepts related to Lean Manufacturing
2. Problem solving
3. 5S - engaging in the perception and elimination of waste
4. Gemba Walk - identifying problems in processes
5. Standardization of work
6. Milk run - organization of supplying stations with materials
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Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Team projects	60.0%	60.0%
Problem-based tests with open-ended and closed-ended questions assessing the understanding of mechanisms and underlying conditions.	60.0%	40.0%

Recommended reading

Basic literature	1. Czerska J, Podstawowe narzędzia Lean Manufacturing, LeanQ Team, 2014 2. Czerska J, Doskonalenie strumienia wartości, wyd 2, LeanQ Team, 2014 3. Czerska J (red.) Poradnik Młodego Lean Lidera, Lean Education, 2019 4. Rajan Suri Zyskaj na Czasie, Wyd MT Biznes 2017 5. Knosala R., Inżynieria Produkcji, Kompendium Wiedzy, Wyd. PWE Warszawa 2017 6. Szatkowski K., Nowoczesne zarządzanie produkcją, Wyd. PWN Warszawa 2014
Supplementary literature	1. Pająk E., Zarządzanie produkcją, Wyd PWN Warszawa 2021 2. Rajan Suri Przewodnik po MCT, Wyd 4Results, QRM Institute Polska
eResources addresses	

Example issues/ example questions/ tasks being completed

- Discuss the construction of the MCT map
- Discuss the 4 pillars of QRM
- Build a QRoc based on selected FTMS
- Use the Lean Management tool in relation to the given problem in the form of a case study

Practical activites within the subject

Not applicable

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