GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Fundamentals of production and services management, PG_00055043		
Field of study	Management and Production Engineering		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2022/2023
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	at the university
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	1.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Manufacturing and Production Engineering -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Piotr Sender	
	Teachers	dr inż. Piotr Sender dr inż. Krzysztof Doerffer	

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	The selected program of lectures has to equip students with the necessary basic knowledge of the range of models' applications for production management at the tactical and operational level, of issues related to the planning of range-quantitatively, also the planning of resources in terms of demand-dependent and independent up to the issues related to the maintenance of the park machine aimed to evaluate and improve the effectiveness of machinery and equipment.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U09] can use analytical techniques as well as computer simulation and numerical analysis methods in solving specific problems in the field of production engineering, is able to carry out simple engineering tasks related to the production of typical machine parts using widely understood techniques and computer tools, is able to select and apply appropriate methods of project planning and control courses with the use of computer aided means	The student uses the available computer tools. Can select software, methods of analysis for optimization and control in the process of solving selected problems in the area of production engineering.	[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information
[K6_W10] has basic knowledge necessary to understand the economic determinants of engineering activities and economic law, to improve the work environment affecting productivity, costs and quality of work	The student is able to choose and apply the right method and tools to solve a complex project task related to economic analysis and financial control project implementation	[SW1] Assessment of factual knowledge
[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 formulates opinions, draws conclusions, presents the content using the industry vocabulary of the area of management and production engineering	[SU5] Assessment of ability to present the results of task [SU2] Assessment of ability to analyse information
[K6_K03] is aware of the social role of a graduate of a technical university, understands the importance of non-technical aspects and effects of engineering activities including their impact on the environment and responsibility for decisions, sees the need to formulate and provide the public with information and opinions on the achievements of technology, correctly identifies and resolves dilemmas associated with thejob of an engineer	The student uses the knowledge obtained in the various modules to assess the non-technical effects of engineering activities and adopts responsible attitudes	[SK5] Assessment of ability to solve problems that arise in practice
[K6_W08] has basic management knowledge, including process and product quality management, and detailed knowledge of integrated and standardized quality, environmental, health and safety management systems	On the basis of the performed case analysis, the student is able to identify the factors conditioning the effective management of quality, stability and repeatability of production processes	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge

Subject contents

The program of lectures. Essence of production management and services. Product and its design, quality, reliability, design, forecasting demand. The concept of the production system. The structure, forms of organization and management systems. The process of manufacturing, distribution, manufacture, production flow control (simulation and analytic methods). Design of production systems, production control and programming services. Material Requirements Planning (MRP) and Manufacturing Resource Planning (MRP II). Synchronization of material flow by the JIT concept. Flow control of production (kanban system), cost-effective production (LP), the management of cross-sections bottleneck (OPT) and human resources. Computer-aided management production and services.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written exam	60.0%	100.0%

Recommended reading	Basic literature	1. Pająk Edward , Klimkiewicz Marek , Kosieradzka Anna, Zarządzanie produkcją i usługami, PWE Polskie Wydawnictwo Ekonomiczne2014 2. Pająk Edward, Zarządzanie produkcją. Produkt, technologia, organizacja,. Wydawnictwo Naukowe PWN 2021 3. Inżynieria produkcji. Kompendium wiedzy, praca zbiorowa, PWE Polskie Wydawnictwo Ekonomiczne 2017 4. Janusz Mleczko,Sławomir Kłos,Zbigniew Banaszak,praca zbiorowa. Zintegrowane systemy zarządzania. PWE 2016 5. Durlik I.: Inżynieria zarządzania. cz I i II, Agencja Wydawnicza PLACET, Warszawa 2001. 6. Muhlemann A.P. i inni: Zarządzanie. Produkcja i usługi. PWN, Warszawa 2001. 7. Koźmiński A., Piotrowski A.: Zarządzanie - teoria i praktyka. PWN, Warszawa 2001 8. Brzeziński M.: Organizacja i sterowanie produkcją, Placet, Warszawa 2002 9. Chlebus E.: Techniki komputerowe CAx w inżynierii produkcji, WNT, Warszawa 2001 10. Szatkowski K. Nowoczesne zarządzanie produkcją, Wydawnictwa Naukowe PWN 2021 11. Kulińska E., Busławski A., Zarządzanie procesem produkcji, Difin 2019
	Supplementary literature	1. Lis. S.: Organizacja i ekonomika procesów produkcyjnych w przemyśle maszynowym, PWN, Warszawa 1984 2. Orlicky J.: Planowanie potrzeb materiałowych, PWE, Warszawa 1995 3. Sarjusz-Wolski Z.: Sterowanie zapasami w przedsiębiorstwie, PWE, Warszawa 2000 4. Waters D.: Zarządzanie operacyjne, Wyd.Nauk. PWN, Warszawa 2001 5. Moden Y.: Toyota Production System, Industrial Engineering and Management Press, Norcross, USA, 1983 6. Ohna T.: Kanban - Just-in-time at Toyota. Management Begins at the Workplace, Japan Management Association - Productivity Press, Cambridge 1989 7. Hopp W.J., Spearman M.L.: Factory Physics: Foundations of Manufacturing Management, Irwin/McGraw-Hill, New York 2001 8. Nakajima S.: Introduction to TPM - Total Productive Maintenance, Asian Productivity Organisation, Tokyo 1990 9. Takahashi Y., Osada T.: TPM - Total Productive Maintenance, Productivity Press, Cambridge 1988 10. Hamrol, Mantura: Zarządzanie jakością. Teoria i praktyka, PWN, Warszawa 2004
	eResources addresses	Adresy na platformie eNauczanie: Podstawy zarządzania produkcją i usługami, W, ZiIP, sem 01, zimowy 22/23 (PG_00055043) - Moodle ID: 24268 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=24268
Example issues/ example questions/ tasks being completed	1st . Planning of the production cycle. 2nd Design and optimization of production streamlining. 3rd Application of Kanban production control system. 4th Materials resource planning. 5th Indicator of Overall Effectiveness Equipment. 6th Optimization of the production company - linear and aggregate programming models. 7th Planning projects using networking methods.	
Work placement	Not applicable	

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