



Subject card

Subject name and code	PRODUCTION ENGINEERING, PG_00070728						
Field of study	Engineering Management						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
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	Part-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		5.0		
Learning profile	general academic profile		Assessment form		exam		
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. Jolanta Łopatowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	18.0	18.0	0.0	0.0	0.0	36
	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	36		3.0		86.0	125
Subject objectives	Preparing students to design and improve solutions in the area of production planning and control by applying analytical methods and tools that support operational decision-making, based on knowledge of the functioning of production systems and factors affecting their efficiency, as well as fostering attitudes of responsibility and independence in decision-making in the context of real production processes.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U02] communicates effectively with others by preparing presentations that use terminology specific to the field of engineering management, and by evaluating diverse opinions during discussions and debates.		is able to present an analysis of a production process using appropriate production engineering terminology and justify proposed improvements during team discussions.		[SU1] Assessment of task fulfilment		
	[K6_K01] is ready to fulfill professional roles responsibly, taking legal, ethical, and cultural aspects into account in decision-making processes.		is ready to make decisions related to organizing and improving production processes, considering their impact on safety, costs, and compliance with regulations.		[SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills		
	[K6_W03] knows reliable sources of information and utilizes advanced knowledge to explain contemporary management issues.		knows and understands the factors influencing the efficiency of production systems in the context of analyzing information related to production planning and control processes.		[SW1] Assessment of factual knowledge		

Subject contents	Course content – lecture 1. Production system and production process 2. Activities in production planning and control 3. Forecasting in demand planning 4. Capacity planning 5. Sales and operations planning S&OP 6. Master production schedule MPS. Sequence of tasks 7. Push and pull strategies. 8. Planning and control in MRPII/ERP, APS, MES systems 9. Balancing production (OPF) in JiT systems, heijunka. Kanban system, supermarket 10. Production control according to the Theory of Constraints, DBR method. Course content – exercises 1. Elements of a production system. 2. Process scheduling. 3. Demand forecasting. 4. Effective capacity and capacity planning. 5. Sales and operations planning (S&OP). 6. MRP procedure. 7. One piece flow (OPF). 8. Kanban circulation and supermarket. 9. Heijunka. 10. DBR method. 11. Elements of throughput accounting (TA).		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test with problem-solving tasks, open theoretical questions, and true/false questions	60.0%	50.0%
	Problem-solving tasks	60.0%	25.0%
	Project tasks (reports)	60.0%	25.0%
Recommended reading	Basic literature	1. Brzeziński, M. (2002). Organizacja i sterowanie produkcją, Warszawa: Placet. 2. Waters, D. (2021). Zarządzanie operacyjne. Towary i usługi, Warszawa: Wydawnictwo Naukowe PWN. 3. Bozarth C., Handfield R..(2021). Wprowadzenie do zarządzania operacjami i łańcuchem dostaw. Helion	
	Supplementary literature	1. Balle, F., Balle, M. (2023). Kopalnia złota, Wrocław 2. Goldratt, M. Cox, J. (2023). Cel. Doskonałość w produkcji, Mint Books 3. Pająk, E (2021). Zarządzanie produkcją, Warszawa: Wydawnictwo Naukowe PWN.. 4. The Productivity Press Development Team.(2010). Kanban na hali produkcyjnej, Prod.Publishing	
	eResources addresses		
Example issues/ example questions/ tasks being completed	• Sales on operations planning S&OP • Characteristics of the drum-buffer-rope method		
Practical activities within the subject	Not applicable		

Document generated electronically. Does not require a seal or signature.