GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	OPERATIONAL MANAGEMENT, PG_00067695		
Field of study	Management		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	second-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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	6.0
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. Grzegorz Zieliński	
	Teachers	dr inż. Grzegorz Zieliński Magdalena Laskowska dr inż. Elwira Brodnicka	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	16.0	24.0	0.0	0.0	0.0	40

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 8301 Zarządzanie operacyjne (NST) zima 2026/2027
https://enauczanie.pg.edu.pl/2025/course/view.php?id=8301

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	40	3.0	107.0	150

Subject objectives

Preparing students to responsibly interpret the results of operational analyses and formulate conclusions based on knowledge of organizational processes, resources, and environment, as well as fostering attitudes related to conscious decision-making in the context of business performance

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W01] "demonstrates in-depth knowledge and understanding of contemporary management problems, and selects methods for resolving them while taking into account the complex interrelationships among the phenomena being analyzed.	has in-depth knowledge of contemporary issues in operational management and understands the relationships between an organization's processes, resources, and environment	[SW1] Assessment of factual knowledge
[K7_U02] presents logical and well-founded arguments regarding obtained results through the analysis and synthesis of information in various business contexts, critically evaluating their interpretation.	is able to responsibly interpret operational analysis results, formulate logical and well-justified conclusions, and critically evaluate their significance in various business contexts	[SU5] Assessment of ability to present the results of task

Subject contents

Course content – lecture

Introduction to production management
Historical view. Trends
Operational strategy as a competitive tool
Objectives and measures of operational activities. Productivity
The structure of the production system. Structure, types and forms of organization of production
Methodology of designing production systems
Organization of the production process
Continuous improvement and reengineering of processes
Production planning and control
Demand forecasting
Coordination of demand and production
Supplies management
Material Requirements Planning (MRP) method
Changing the principles of production management in the conditions of using information technology: MRP II, CIM and BPR
The concept of JIT and Lean Manufacturing
Kanban flow control system
Human resource management in production systems
Quality definitions
Development of quality management
Quality of products and services
Quality determinants and their level of importance
CSI and ESI index; QFD method and quality house
Tools of the classic seven of quality
New quality seven tools
Normalization on the example of ISO 9000
ISO 14000 Environmental Management System; ISO 18000; HACCP and ISO 22000
Quality management concepts by E. Deming, J. Juran, Ph. Crosby
Models of Excellence
Quality costs

Course content – exercises

Identification of features of products and services
Examples of quality determinants in products and services
Calculation of the level of customer and employee satisfaction using the CSI and ESI indexes
Quality cottage construction
Use of cause and effect tools
The use of the tools of the classic seven of quality
The use of tools of the new quality seven
Group problem solving methods
Creating a quality policy
Quality documents in standardization
Environmental policy
Statistical methods in quality
Control cards
Calculation of the Cp and Cpk indices
Deming's quality theses; Juran and Crosby
Excellence Model Criteria
Calculation of quality costs

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written exam with open-ended questions	60.0%	50.0%
Written report with presentation of results	60.0%	50.0%

Recommended reading

Basic literature	Waters D.: Zarządzanie operacyjne. PWN, 2001 Durlik I.: Inżynieria zarządzania. Strategia i projektowanie systemów produkcyjnych, część I i II, Placet, Warszawa 1995 i 1996 Dahlgaard J., Kristensen K., Kanji G., Podstawy zarządzania jakością, Wyd. PWN, Warszawa 2002 Lock D., Podręcznik zarządzania jakością, Wyd. PWN, Warszawa 2002 Łuczak J., Matuszak- Flejszman A., Metody i techniki zarządzania jakością. Kompendium wiedzy Wyd. Quality Progress Poznań 2007
Supplementary literature	Jasiński Z.: Podstawy zarządzania operacyjnego, Oficyna Ekonomiczna, Kraków, 2005 Muhlemann A.P., Oakland J.S., Lockyer K.G.: Zarządzanie. Produkcja i usługi. PWN Warszawa 1995 Krajewski L.J., Ritzman L.P.: Operations Management: Strategy and Analysis. 4th Edidion, Addison-Wesley Publishing Company, 1996 Hamrol A., Zarządzanie jakością z przykładami, Wyd PWN, Warszawa 2005; Urbaniak M., Zarządzanie jakością. Teoria i praktyka, Wyd. Difin, Warszawa 2005
eResources addresses	

Example issues/ example questions/ tasks being completed	Operational strategy as a competitive tool Prioritize competing in quality, productivity and time The main objectives and criteria for evaluating enterprises Structure, types and forms of organization of production Organization of the production proces Continuous improvement and reengineering of processes Coordination of demand and production
Practical activites within the subject	Not applicable

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