GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Supply chain management, PG_00073991		
Field of study	Engineering Management		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2026/2027
Education level	first-cycle studies	Subject group	Optional subject group 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	English
Semester of study	4	ECTS credits	2.0
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. Joanna Czerska	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	16.0	0.0	0.0	0.0	16

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 9332 Supply chain management_NST_2027
https://enauczanie.pg.edu.pl/2025/course/view.php?id=9332

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	16	3.0	31.0	50

Subject objectives

To prepare students to analyse and design improvements to supply chain management processes using appropriate methods and tools, based on knowledge of planning, flow coordination and inventory management, and to develop their readiness to critically evaluate adopted solutions and draw on expert knowledge in supply chain decision-making.

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 evaluate available information and adopted assumptions when solving supply chain management problems, and to fill identified information gaps using the opinions of external experts.	[SK5] Assessment of ability to solve problems that arise in practice
[K6_U05] designs innovative solutions for complex management processes by utilizing appropriate methods and techniques.	Is able to analyse and design improvements to supply chain management processes, using appropriately selected methods and tools to identify problems, evaluate alternative solutions and justify proposed changes.	[SU3] Assessment of ability to use knowledge gained from the subject

Subject contents

Course content – exercises

1. Introduction to Supply Chain Management – participants, objectives, and the flow of materials, information, and funds.
2. SCM Simulation Game – the impact of local decisions, limited information, and delays on supply chain operations.
3. Roles, Decisions, Costs, and Performance Metrics in SCM – Areas of Responsibility, Key Decisions, Cost Categories, and Measurement and Interpretation of Results.
4. Supply Chain Analysis and Modeling – Mapping Flows, Material Requirements, and Identifying Constraints and Risks.
5. Demand and Supply Management – demand volatility, delivery time and reliability, batch size, and process synchronization.
6. Product portfolio segmentation and inventory holding decisions—inventory turnover, ABC/XYZ analysis, material criticality, and inventory location.
7. Selection of inventory control methods and their parameters—reorder point, Min–Max, periodic review, Kanban, and make-to-order.
8. Inventory calculation and evaluation of supply chain improvement options—calculating inventory levels and costs, comparing options, justifying recommendations, and critically verifying data and assumptions with input from external experts.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Case Study Report	60.0%	60.0%
Individual Decision Verification Form	60.0%	40.0%

Recommended reading

Basic literature	• Abbas, A., Goosheh, S. (2024). *Fundamentals of Operations Management*. Fanshawe College. • Adzija, R. i współautor niewymieniony z nazwiska (2022). *Introduction to Logistics*. Conestoga College. • Petropoulos, F. i in. (2026). Operations & supply chain management: principles and practice. *International Journal of Production Research*, 64(1), 330–513.
Supplementary literature	• Christopher, M. (2023). *Logistics & Supply Chain Management*. Wyd. 6. Pearson / FT Publishing International. • Chopra, S. (2026). *Supply Chain Management: Strategy, Planning, and Operation*. Wyd. 8. Pearson. • Richards, G., Grinsted, S. (2024). *The Logistics and Supply Chain Toolkit: Over 100 Tools for Transport, Warehousing and Inventory Management*. Wyd. 4. Kogan Page.
eResources addresses	

Example issues/ example questions/ tasks being completed	1. Identifying supply chain participants and mapping material, information and financial flows. 2. Participating in a supply chain simulation and analysing how individual decisions affect inventory, costs and customer service. What mechanisms cause the bullwhip effect? 3. Mapping the case study company’s supply chain, with responsibility shared among three team members covering procurement, production and distribution. 4. Identifying problems, constraints and risks within and across supply chain functions. Which problems are local, and which arise from interdependencies? 5. Selecting and interpreting supply chain performance indicators. Can improving one function’s performance reduce overall supply chain performance? 6. Analysing how demand variability, replenishment lead times, order quantities and supplier reliability affect inventory levels and product availability. 7. Calculating basic material requirements using finished-product demand and bills of materials. 8. Analysing inventory turnover and conducting ABC/XYZ classification. How do material criticality and supply risk influence inventory decisions? 9. Selecting inventory control policies and calculating basic replenishment parameters for selected stock-keeping units. 10. Developing and comparing procurement, production flow and distribution improvement options, considering costs, availability, lead times and risk. 11. Preparing a supply chain analysis and improvement report presenting the diagnosis, evaluation of alternatives and an integrated recommendation. 12. Critically evaluating the data and assumptions underlying the analysis. Which information requires verification, and how does uncertainty affect the recommendation? 13. Formulating questions for an external expert, using expert input to address identified information gaps, and evaluating the relevance and limitations of the advice received. 14. Preparing an individual decision verification record documenting initial assumptions, expert input and the rationale for revising or retaining the proposed solution.
Practical activites within the subject	

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