



Syllabus Course Program



Logistics Management

Specialty

073 – Management

Institute

Institute of Education and Science in Economics, Management and International Business

Educational program

Business administration (in English)

Department

Management (204)

Level of education

Master's level

Course type

Special (professional), Elective (optional)

Semester

2

Language of instruction

English

Lecturers and course developers



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Ph.D. (C.Sc.) in Economic Sciences, associate professor of Management department

Authored and co-authored over 30 scientific and methodological publications. Courses: Operations management, Supply chain management, Logistics management, Information technology in management, SMM management

[More about the lecturer on the department's website](#)

General information

Summary

The Logistics Management course is focused on mastering of modern methods of the logistics systems development at various companies and their management, as well as the use of modern technologies and knowledge to ensure effectiveness of logistics processes.

Course objectives and goals

Formation of modern managerial thinking and knowledge system in the field of logistics, development of logistics and supply chain systems and organization of relevant management activities

Format of classes

Lectures, practical studies (workshops), self-study. Control work (Individual assignment). Differentiated grading.

Competencies

SC4. The ability to efficiently use and develop organizational resources.

SC9. The ability to analyze and structure organizational problems, make effective organizational decisions and ensure their implementation.

SC10. The ability to manage an organization and its development.

Learning outcomes

L03. To design effective management systems for organizations
L05. To plan organization's activities from both strategic and tactical perspectives
L013. To be able to plan and provide informational, methodological, material, financial and staffing support for an organization (unit)

Student workload

The total volume of the course is 120 hours (4 ECTS credits): lectures - 32 hours, workshops - 16 hours, self-study - 72 hours.

Course prerequisites

The prerequisites for this course are knowledge and practical skills, demonstrated by successfully passing the Unified Professional Entrance Exam in Management and Administration (Order of the Ministry of Education and Science of Ukraine No. 157 dated February 11, 2022).

Features of the course, teaching and learning methods, and technologies

Lectures are delivered interactively with the use of multimedia technologies. Workshops focus on the use of modern information technology and popular software tools that are required in real-world situations. Learning materials are available to students via Microsoft Teams.

Program of the course

Topics of the lectures

Topic 1. The concept and essence of logistics. The purpose of logistics activities (Lectures 1-2)

Concept of logistics. Logistics functions. The role of logistics in business operations. Types of logistics (inbound, outbound, reverse, etc.).

Topic 2. Logistics management and Supply Chain Management (SCM) concepts (Lectures 3-4)

Differences between logistics management and supply chain management. Components of supply chain management. The role of technology in SCM. Integrated logistics and SCM. Trends and challenges in SCM.

Topic 3. Warehousing (Lectures 5-6)

Types of warehouses and storage facilities. Warehouse layout and design. Warehouse management systems (WMS). Inventory management. Automation in warehousing.

Topic 4. Procurement logistics (Lectures 7-8)

The procurement process and its importance. Supplier selection and evaluation. Procurement cycle. Make or buy decision.

Topic 5 Distribution logistics (Lectures 9-10)

Distribution channels and networks. Transportation modes and selection criteria. Role of distribution centers.

Topic 6. Management of logistics costs (Lectures 11-12)

Classification of logistics costs and cost components in logistics. Cost reduction strategies in logistics. Activity-based costing in logistics.

Topic 7. Logistics strategy of a company (Lectures 13-14)

Developing a logistics strategy. Aligning logistics strategy with corporate strategy. Logistics and production systems.

Topic 8. Logistics performance, SCOR model (Lectures 15-16)

Introduction to the SCOR model. SCOR model metrics and performance indicators. Applying the SCOR model to real-world scenarios.

Topics of the workshops

Topic 1. Logistics processes at enterprises

Case study (logistics processes, international delivery, warehousing challenges). Logistics activities.

Topic 2. Building the structure of the logistics network

Centralized vs. decentralized logistics networks. External and internal factors influence on supply chains.

Topic 3. Economic order quantity (EOQ)

Concept of EOQ, derivation of the formula. Calculation of EOQ. Assumptions and limitations of the EOQ model.

Topic 4. Inventory Planning (MRP, DRP)

Material Requirements Planning (MRP) schedule for a manufacturing company. Distribution Requirements Planning (DRP) schedule for a distribution network.

Topic 5. Transportation problems. Travelling salesman problem

Traveling Salesman Problem solution methods. Solving transportation problems using Microsoft Excel.

Topic 6. Management of logistics costs

Cost drivers in the logistics process of an enterprise. Activity-based costing for logistics activities.

Topic 7. Strategy of logistic activity in manufacturing

Developing a logistics strategy. Logistics vs. SCM strategy.

Topic 8. Modeling of logistics functions at the enterprise and their connection

Model logistics processed using SCOR model. Developing scenarios to optimize the logistics functions and performance.

Topics of the laboratory classes

No laboratory classes are included in the plan.

Self-study

The course involves learning additional materials regarding the topics of the lectures.

Also, the course includes performing an individual assignment control work related to processing of theoretical information as well as a calculation task using spreadsheets (Excel).

Students are also recommended additional materials (videos, articles) for independent study and analysis.

Course materials and recommended reading

1. Gabriellova, T., Lytvynenko, S., Ivannikova, V., & Lytvynenko, L. (2020). Cargo Science and Logistics. Kyiv: Condor.
2. Rossi, R. (2021). Inventory Analytics. <https://doi.org/10.11647/OBP.0252>
3. Luca, S. D., Pace, R. D., & Djordjevic, B. (Eds.). (2020). Transportation Systems Analysis and Assessment. <https://doi.org/10.5772/intechopen.75294>
4. Szymonik, A. (2012). Logistics and Supply Chain Management. Retrieved from https://www.researchgate.net/publication/297369572_Logistics_and_Supply_Chain_Management
5. Mistri, V.M. (2023). Supply Chain Resilience: Adapting to Dynamic Markets. Inkbound Publishers. https://www.google.com.ua/books/edition/Supply_Chain_Resilience_Adapting_to_Dyna/OAEJEQAAQBAI?hl=en
6. Yuan, X.-M. (2020). Impact of Industry 4.0 on Inventory Systems and Optimization. In Industry 4.0—Impact on Intelligent Logistics and Manufacturing. IntechOpen. <https://doi.org/10.5772/intechopen.90077>
7. Bartholdi, John J. III. (2019). Warehouse and Distribution Science. Supply Chain and Logistics Institute, School of Industrial and Systems Engineering, Georgia Institute of Technology. <https://www.warehouse-science.com/book/index.html>
8. PricewaterhouseCoopers. Shifting patterns: The future of the logistics industry. <https://www.pwc.com/gx/en/industries/transportation-logistics/publications/the-future-of-the-logistics-industry.html>
9. Ковшик В. І. (2017) Управління логістичними витратами машинобудівних підприємств: автореф. дис. ... канд. екон. наук : спец. 08.00.04. НТУ «ХПІ». <https://repository.kpi.kharkov.ua/handle/KhPI-Press/32870>

Assessment and grading

Criteria for assessment of student performance, and the final score structure

100% of the final grade consists of the final assessment (50%) and the continuous assessment (50%).

Final assessment: report on the individual assignment (50%)

Continuous assessment: testing (two online tests) (40%); completion of tasks during workshops (10%)

Grading scale

Total points	National	ECTS
90-100	Excellent	A
82-89	Good	B
75-81	Good	C
64-74	Satisfactory	D
60-63	Satisfactory	E
35-59	Unsatisfactory (requires additional learning)	FX
1-34	Unsatisfactory (requires repetition of the course)	F

Norms of academic integrity and course policy

The student must adhere to the Code of Ethics of Academic Relations and Integrity of NTU "KhPI": to demonstrate discipline, good manners, kindness, honesty, and responsibility. Conflict situations should be openly discussed in academic groups with a lecturer, and if it is impossible to resolve the conflict, they should be brought to the attention of the Institute's management. Regulatory and legal documents related to the implementation of the principles of academic integrity at NTU "KhPI" are available on the website: <http://blogs.kpi.kharkov.ua/v2/nv/akademichna-dobrochesnist/>

Approval

Approved by



August 28, 2024

Head of the department
Olena PROKHORENKO



August 28, 2024

Guarantor of the educational
program

Pavlo BRIN