



## Syllabus Course Program



# Logistics

### Specialty

073 - Management

### Educational program

Management of Organizations and Administration

### Level of education

Bachelor's level

### Semester

7

### Institute

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

### Department

Management

### Course type

Special (professional), Mandatory

### Language of instruction

English

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## Lecturers and course developers



### First name and surname

[natalia.shyriaieva@khpi.edu.ua](mailto:natalia.shyriaieva@khpi.edu.ua)

PhD, associate professor, associate professor

General information, number of publications, main courses, etc.

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

## General information

### Summary

The course "Logistic" is focused on mastering of modern methods of the logistics management and development, as well as the use of modern technologies to ensure effectiveness of logistics processes in a supply chain.

### Course objectives and goals

Development of modern managerial thinking and knowledge in the field of logistics management and supply chain management

### Format of classes

Lectures, workshops, consultations. Individual assignment (calculation task). Final control – exam.

### Competencies

GC04. The ability to apply knowledge in practical situations.

GC05. Knowledge and understanding the subject area and understanding the professional activity.

GC08. Skills of information and communication technology usage.

SC08. The ability to plan the organization activity and to manage time.

SC10. The ability to assess the performed works, to ensure their quality and to motivate personnel of an organization.

SC1.4. Understanding the principles of logistics flow formation and use them in professional activities  
business ethics and use them in professional activities

## Learning outcomes

LO 06. To demonstrate the skills related to search, collection, and analysis of information, calculation of indicators for substantiation of managerial decisions.

PO1.2 To explain the general principles and regularities of integrated management of material, information, financial and other flows

## Student workload

The total volume of the course is 150 hours (5 ECTS credits): lectures - 48 hours, workshops - 16 hours, self-study - 86 hours.

## Course prerequisites

Previous courses that are necessary to complete before and for successful course completion: Theory of Organization, International Business, Marketing, Resource Management, Management Decisions

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

Interactive lectures with presentations, discussions, workshops, project-based learning, teamwork, gamification, case studies

## Program of the course

### Topics of the lectures

#### Topic 1. Theory of logistics.

Introduction. Main definitions. Historical aspects.

#### Topic 2. Logistics concept and logistics activities in SCM.

Logistics concept. Logistics activities in SCM. Supply chain stakeholders.

#### Topic 3. Material and information flows.

Materials flow. Information flow.

#### Topic 4. Functions of logistics.

Purchasing, manufacturing, warehousing, transportation, customer service, demand planning, supply planning.

#### Topic 5. SCOR model

Components of the SCOR model. Implementation the SCOR model.

#### Topic 6. Management of logistics costs of supply chain.

Types of logistics costs. Strategies to reduce costs in logistics and supply chain management. Concept of logistics performance evaluation. Performance evaluation indicators. Efficiency Curve.

#### Topic 7. Information technologies in logistics.

Role of IT in logistics and supply chain management. Software for logistics management.

#### Topic 8. Logistics strategies.

Components of a logistics strategy. Types of logistical strategies. Logistics strategies according to sustainable development goals.

#### Topic 9. Logistics shocks and risks. Resilience in logistics.

Types of logistics shocks. Logistics disruptions in critical sectors.

#### Topic 10. Logistics 4.0. Future of supply chains.

Technologies 4.0 in Logistics. The effect of technologies 4.0 on logistics processes.

### Topics of the workshops

#### Topic 1. Building/Modeling the structure of the logistics network.

Network design: key Issues. Data for network design.

#### Topic 2. Logistics processes at enterprises. Toyota case

Toyota's supply chain system. Toyota's approach to process improvement.

#### Topic 3. Economic order quantity. Inventory Planning (MRP)

EOQ calculations. ABC-XYZ analysis. MRP system for manufacturers.

#### Topic 4. Green Logistics. Urban logistics.

Approaches for the optimization of resource-efficient logistics services.

### Topic 5. Management processes in the SCOR model.

The SCOR model for supply chain strategic decisions.

### Topic 6. Logistics costs. Forecasting

Types of logistics costs. Approaches to logistics costs forecasting.

### Topic 7. Sustainable Supply Chain Management.

Environmental and sustainable performance. Logistics and supply chain risks and its effect on SDGs.

### Topic 8. Logistics 4.0.

Case study (companies cases).

## Topics of the laboratory classes

This course does not include laboratory classes.

## Self-study

Students have all supporting materials for self-studying. An individual assignment is a necessary element of the total grade. The IA topics are introduced to students in the beginning of the semester. The topics will reflect the current challenges in Logistics and supply chain management, and will be connected with digitalization and SDG (twinning transition strategies). The results of the IA should be formed in a file and supported by the presentation.

## Course materials and recommended reading

### Compulsory materials

1 Branch, Alan E. Global supply chain management and international logistics. Routledge, 2008. P. 187.

Basu, Ron, and J. Nevan Wright. Total supply chain management. Routledge, 2010.

2 Frazelle, Edward. Supply chain strategy: the logistics of supply chain management. MCGraw-Hill Education, 2002.

3 Long, Douglas. International logistics: global supply chain management. Dordrecht, The Netherlands: Kluwer academic publishers, 2003.

4 Олійник Я.Б., Смирнов І.Г. Міжнародна логістика / Я.Б.Олійник, І.Г.Смирнов - К.: Обрії, 2011. – 540с.

5 Gabriellova, T., Lytvynenko, S., Ivannikova, V., & Lytvynenko, L. (2020). Cargo Science and Logistics. Kyiv: Condor.

6 Rossi, R. (n.d.). Inventory Analytics. <https://doi.org/10.11647/OBP.0252>

7 Luca, S. D., Pace, R. D., & Djordjevic, B. (Eds.). (2020). Transportation Systems Analysis and Assessment. <https://doi.org/10.5772/intechopen.75294>

8 Szymonik, A. (2012). Logistics and Supply Chain Management.

[https://www.researchgate.net/publication/297369572\\_Logistics\\_and\\_Supply\\_Chain\\_Management](https://www.researchgate.net/publication/297369572_Logistics_and_Supply_Chain_Management)

9 Agolla, J. E. (2021). Smart Manufacturing: Quality Control Perspectives. In Quality Control—Intelligent Manufacturing, Robust Design and Charts. IntechOpen. <https://doi.org/10.5772/intechopen.95143>

10 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>

### Additional materials

1 Bonacsch E., Wilson I. Getting the Goods: Ports, Labor and the Logistics Revolution. – NY: Cornell University, 2008/ - 273 p.

2 Li, Pengzhong, ed. Supply chain management. BoD–Books on Demand, 2011.

3 Mangan, John, and Chandra Lalwani. Global logistics and supply chain management. John Wiley & Sons, 2016.

4 Long, Douglas. International logistics: global supply chain management. Dordrecht, The Netherlands: Kluwer academic publishers, 2003. Long, Douglas. International logistics: global supply chain management. Dordrecht, The Netherlands: Kluwer academic publishers, 2003.

5 McKinsey and Company. What is supply chain? URL: <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-supply-chain>

## Assessment and grading

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

100% Final assessment as a result of Final exam (40%) and Continuous assessment (60%).  
40% Final exam: written assignment (theory + problem solving) and its oral presentation.  
60% Continuous assessment: online tests and individual calculation assignment.

### 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

12.02.2023

**Head of the department**  
Olena PROKHORENKO

**Guarantor of the educational program**  
Olena LINKOVA