



Syllabus Course Program



Supply Chain Management

Specialty

073 - Management

Educational program

Business Administration

Level of education

Bachelor's level

Semester

7

Institute

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

Department

Management

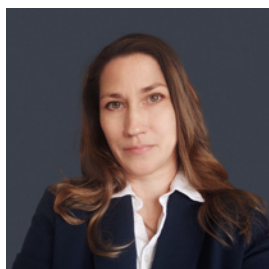
Course type

Special (professional), Mandatory

Language of instruction

English

Lecturers and course developers

**First name and surname**

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 "Supply chain management" is focused on mastering of modern methods of the supply chain 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 supply chain management and logistics 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.

GC06. The ability to communicate by the national language both orally and in writing.

GC09. The ability to learn and to master modern knowledge.

SC02. The ability to analyze the results of organization activity, to compare them with the factors of the external and internal environment.

SC04. The ability to determine the functional areas of the organization and the relationships between them.

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.

SC12. The ability to analyze and structure the organizational problems, make informed and justified decisions.

SSC1.2. The ability to describe business processes in supply chains and to manage material, information, financial and other flows

Learning outcomes

LO04. To demonstrate the ability to identify problems and justify managerial decisions.

LO05. To describe the content of the functional areas of an organization

LO 06. To show skills of search, collecting, and analysis of information, calculation of indicators to substantiate management decisions.

LO 08. To apply management methods for ensuring the effectiveness of an organization.

LO 18. To plan business activities and organize the provision of resources to a business entity.

LO1.2. To evaluate the effectiveness of supply chain management and to identify areas for optimization

Student workload

The total volume of the course is 150 hours (5 ECTS credits): lectures - 32 hours, workshops - 32 hours, self-study - 86 hours.

Course prerequisites

Previous courses that are necessary to complete before and for successful course completion: Business Communications, Human Resource Management, Innovation Management, International Business, Marketing

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. The concept and essence of Supply Chain Management (SCM).

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 supply chains.

Purchasing, manufacturing, warehousing, transportation, customer service, demand planning, supply planning and Supply Chain management.

Topic 5. SCOR model

Components of the SCOR model. Implementation the SCOR model.

Topic 6. Management of logistics costs of supply chain. Evaluation of SCM efficiency.

Main Types of Logistics Costs. Strategies to reduce costs in logistics and supply chain management.

Concept of SC performance evaluation. Performance evaluation indicators. Supply Chain Efficiency Curve.

Topic 7. Information technologies in SCM.

Role of IT in supply chain management. The Functional Roles of IT in Supply Chain Management. Software for Supply Chain Management. Types of Supply Chain Management in IT

Topic 8. SCM strategies.

Components of a Supply Chain Strategy. Types of Supply Chain Strategies. Business strategy.

Organizational strategy.

Topic 9. Supply chain shocks and risks.

Types of supply chain shocks. Supply chain disruptions in critical sectors.

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

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. Sustainability related supply chain risks.

Topic 8. SCM strategy according to the twinning transition formulation.

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 problems in Supply Chain Management, and will be connected with digitalization and SDG. The results of the IA should be formed in a file and supported by the presentation.

Course materials and recommended reading

Compulsory materials

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

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

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

4 Пономарьова Ю.В. Логістика: Навчальний посібник. – К.: Центр навчальної літератури, 2005. – 328 с.

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 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 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 Колодізева Т. О. Управління ланцюгами поставок : навчальний посібник. — Харків : ХНЕУ ім. С. Кузнеця, 2016. — 164 с.

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 PROKHORENKO