



Syllabus Course Program



Operational Management

Specialty

073 – Management

Institute

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

Educational program

Management of organizations and administration

Department

Management (204)

Level of education

Bachelor's level

Course type

Mandatory

Semester

4

Language of instruction

English

Lecturers and course developers

**Valentin Kovshik**

valentin.kovshik@khpi.edu.ua

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 Operations Management course develops the knowledge and skills necessary to effectively manage operations of companies. During the course, students will learn how to organize, plan, control and improve manufacturing and service-providing processes, effectively achieve strategic objectives of the company, ensure product quality, and satisfy customer needs.

Course objectives and goals

Mastering theoretical knowledge and practical skills in the field of operational management. Formation of understanding of theoretical principles, categories, modern concepts and practical methods of managing the operational activities of companies, improving operational strategies, using production management tools as a basis for attaining business goals.

Format of classes

Lectures, workshops, self-study. Individual assignment. Final control in the form of an exam.

Competencies

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

GC10. The ability to conduct research at an appropriate level.

SC01. The ability to identify and describe the characteristics of organizations.

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

SC05. The ability to manage an organization and its units through performing management functions.

SC07. The ability to choose and use modern tools of management.

SC16. The ability to identify and analyze organizational problems, make informed and well-grounded decisions regarding organizational activities, operational strategies and organizational behavior.

Learning outcomes

LO 03. To demonstrate knowledge of theories, methods and functions of management, modern concepts of leadership.

LO 04. To demonstrate the ability to identify problems and justify managerial decisions.

LO 05. To describe the content of the functional areas of an organization

LO 07. To demonstrate the skills of organizational planning.

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

LO 18. To demonstrate skills related to the identification and analysis of organizational problems, making of well-grounded organizational decisions, development of operational strategies and planning of organizational behavior.

Student workload

The total volume of the course is 180 hours (6 ECTS credits): lectures - 32 hours, workshops - 32 hours, self-study - 116 hours.

Course prerequisites

To successfully complete the course, it is necessary to have knowledge and practical skills from the following courses: "Economic Informatics", "Economic Statistics", "Introduction to Speciality (Introductory practice)", "Theory of Organization", "Enterprise Economics", "Marketing".

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

Lectures are delivered interactively with the use of multimedia technologies. Practical workshops use a project-based learning approach, game-based methods, and focus on the use of information technology in operational management. Learning materials are available to students via OneNote Class Notebook, Google Classroom.

Program of the course

Topics of the lectures

Topic 1: Fundamentals of operational management

The concept of operations. Responsibilities of the operations manager.

Topic 2. Operational strategy

The concept of operational strategy. Formation of strategic goals. Operational management

Topic 3. Production system

The concept of a production system. Toyota Production System (TPS) and its impact on modern management.

Topic 4. Operational management projects

The relationship between project and operations management. Key characteristics of projects. Project evaluation and planning.

Topic 5. Decision-making in operations management

Decision-making methods and their features in operations management.

Topic 6. Managing production processes and quality

The concept of quality control and quality assurance. Control of production and service processes.

Topic 7. Performance of operations

Basics of assessment of performance. Key performance indicators concept.

Topic 8: Information technology in operational management

Software for production and service management. Opportunities for automation of operations.

Topics of the workshops

Topic 1: Features of modern manufacturing.

Study of cases on the production and innovation activities of well-known enterprises. Modeling of production and service processes using BPMN.

Topic 2. Development of strategic goals and operational strategy

Defining objectives for different operational fields and analyzing company strategies.

Topic 3. Toyota Production System (TPS)

The history of TPS. Exploring the advantages and disadvantages of lean manufacturing. Game “Simulation of the Kanban system”.

Topic 4. Project management techniques in operations management

Gantt charts. PERT. Critical path calculations. Project management software basics.

Topic 5. Decision-making in operations management

Decision-making methods. Decision-making software.

Topic 6. Quality management

Quality management tools. Case study “Smartphone factory”.

Topic 7. Performance of operations

Development of a system of key performance indicators.

Topic 8. Information technology in operations management

Statistical process control (SPC). The use of artificial intelligence in operations management.

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 a calculation individual assignment related to practical problem-solving on modeling and calculating the planned parameters of business processes based on the given description of production / service providing. The result is presented in a written report.

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

Course materials and recommended reading

1. Schiraldi, M. M. (Ed.). (2013). Operations Management. <https://doi.org/10.5772/45775>
2. Moynihan, G. P. (Ed.). (2018). Contemporary Issues and Research in Operations Management. <https://doi.org/10.5772/intechopen.71209>
3. Watt, A. (2014). Project Management. BCcampus. <https://opentextbc.ca/projectmanagement/>
4. Liu, S., & Jiang, M. (2011). Providing Efficient Decision Support for Green Operations Management: An Integrated Perspective. In Efficient Decision Support Systems. IntechOpen. <https://doi.org/10.5772/16469>
5. Virasak, L. (2019). Manufacturing processes 4–5. Open Oregon Educational Resources. <https://open.umn.edu/opentextbooks/textbooks/manufacturing-processes-4-5>
6. Bourgeois, D. (2014). Information systems for business and beyond. The Saylor Foundation.
7. Rahman, A. A. A. (2020). Revolution of Production System for the Industry 4.0. In Mass Production Processes. IntechOpen. <https://doi.org/10.5772/intechopen.90772>
8. Muldoon, J. (2014) PMBOK® Summarized. <http://johnmuldoon.ie/wp-content/uploads/2014/08/PMBOK-Summarized.pdf>
9. Маркіна, І.А., Помаз, О.М., та Помаз, Ю.В. (2018) Операційний менеджмент: Навчальний посібник. Полтава: ПДАА.
10. Черепанова, В. О. (2014) Операційний менеджмент: практикум. Харків : НТУ «ХПІ»
11. Старченко, Г. В., Калінько, І. В., Косач, І. А. (2015) Операційний менеджмент. Київ: Кондор

Assessment and grading

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

100% final grade is the result of the final assessment (30%) and continuous assessment (70%).

Final assessment: exam (reporting on the individual assignment, answering open-ended questions) (30%)

Continuous assessment: mid-term test (30%); end-of-term test (30%); problem-solving during the 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

Date, signature

Head of the department
Olena PROKHORENKO

Date, signature

Guarantor of the educational program
Olena LINKOVA