



Syllabus Course Program



Operations management (advanced)

Specialty

073 – Management

Educational program

Business administration

Level of education

Master's level

Semester

1

Institute

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

Department

Management (204)

Course type

Elective

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

This course further develops the knowledge and skills required for effective management of operational activity of companies, developing operational strategies and tactics, organization and control of manufacturing and service business activities.

Course objectives and goals

Mastering theoretical knowledge and practical skills and formation of understanding of theoretical principles, categories, modern concepts, and practical methods of managing the operational activities of enterprises, expanding operational strategies, forming and using industrial operational management subsystems as a basis for achieving business objectives.

Format of classes

Lectures, workshops, self-study. Individual assignment (abstract). Final control in the form of a differentiated grading.

Competencies

GC 02. Ability to communicate with representatives of other professional groups of different levels (with experts from other fields of knowledge / types of economic activity).

SC 04. Ability to effectively use and develop the organization's resources.

SC 10. Ability to manage the organization and its development.

SC2.1. Ability to evaluate the effectiveness of functional areas of the enterprise and choose ways to improve them.

SC2.2. Ability to manage business processes of the enterprise, including choosing the most effective supplier both within the organization and outside it.

Learning outcomes

LO 01. Critically comprehend, select and use the necessary scientific, methodological and analytical tools for management in unpredictable conditions.

LO 05. To plan the activities of the organization in strategic and tactical perspective.

LO 06. To have the skills to make, justify and ensure the implementation of management decisions in unpredictable conditions, considering the requirements of current legislation, ethical considerations and social responsibility.

LO 2.1. Be able to evaluate the effectiveness of functional areas of the enterprise.

LO2.2. Be able to evaluate the effectiveness of business processes of the enterprise and choose the most effective supplier both within and outside the organization.

Student workload

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

Course prerequisites

To successfully complete the course, it is necessary to have basic knowledge and practical skills corresponding to the results of bachelor's level of education for the specialty 073 "Management" and complete the courses Management of organizations, Project management.

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 OneNote Class Notebook, Google Classroom.

Program of the course

Topics of the lectures

Topic 1. The concept and essence of operations management.

Topic 2. Operational strategy

Topic 3. Production system

Topic 4. Projects in operations management

Topic 5. Decision-making in operations management.

Topic 6. Managing the workflow and quality.

Topic 7. Performance of operations

Topic 8. Advanced IT use in Operations management.

Topics of the workshops

Topic 1. Discussion of modern manufacturing management.

Topic 2. Developing strategic goals and their connection to operations.

Topic 3. Project management software.

- Topic 4. Operations research. Advanced PERT charts.
- Topic 5. Mathematical methods in decision making for operations management.
- Topic 6. KPI setting and control
- Topic 7. Using statistical software and AI for 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 an individual assignment related to processing of theoretical information (abstract) as well as a calculation task using spreadsheets. Students are also recommended additional materials (videos, articles) for independent study and analysis.

Course materials and recommended reading

- Schiraldi, M. M. (Ed.). (2013). Operations Management. <https://doi.org/10.5772/45775>
- Chase, R. B., & Aquilano, N. J. (1995). Production and operations management: Manufacturing and services. Chicago: Irwin
- Moynihan, G. P. (Ed.). (2018). Contemporary Issues and Research in Operations Management. <https://doi.org/10.5772/intechopen.71209>
- Watt, A. (2014). Project Management. BCcampus. <https://opentextbc.ca/projectmanagement/>
- 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>
- Virasak, L. (2019). Manufacturing processes 4–5. Open Oregon Educational Resources. <https://open.umn.edu/opentextbooks/textbooks/manufacturing-processes-4-5>
- Bourgeois, D. (2014). Information systems for business and beyond. The Saylor Foundation.
- 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>
- Muldoon, J. (2014) PMBOK® Summarized. <http://johnmuldoon.ie/wp-content/uploads/2014/08/PMBOK-Summarized.pdf>
- Magee, J. F. (1964). Decision Trees for Decision Making. Harvard Business Review. <https://hbr.org/1964/07/decision-trees-for-decision-making>
- Маркіна, І.А., Помаз, О.М., та Помаз, Ю.В. (2018) Операційний менеджмент: Навчальний посібник. Полтава: ПДАА.
- Черепанова, В. О. (2014) Операційний менеджмент: практикум. Харків : НТУ «ХПІ»
- Старченко, Г. В., Калінько, І. В., Косач, І. А. (2015) Операційний менеджмент. Київ: Кондор
- Гевко, І. Б. (2011) Методи прийняття управлінських рішень: підручник. Київ : Кондор.
- Воронкова, В. Г., Беліченко, А. Г., Желябін, В. О., Кириченко, І. Г., Ажажа, М. А. (2006) Операційний менеджмент. Львів : Магнолія.

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

Continuous assessment: mid-term test (30%); completion of the tasks during the workshops (40%)

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
Pavlo BRIN