

Operations management

COURSE SYLLABUS

Code and name of specialty	073 Management	Institute	Institute of Education and Science in Economics, Management and International Business
Program name	Management of Organizations and Administration	Department	Management
Type of program	Educational and Professional	Language of instruction	English, Ukrainian

LECTURERS

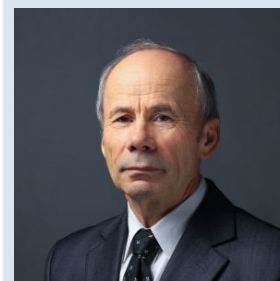
Valentin Kovshik, valentin.kovshik@khpi.edu.ua



Ph.D. (C.Sc.) in Economic Sciences, Associate Professor, Department of Management, NTU "KhPI". Authored and co-authored over 30 scientific and methodological publications.

Courses: Operations management, Supply chain management, Logistics management, Production logistics, Information systems and technologies in management

Mykola Horbunov, horbunov.mykola@khpi.edu.ua



Ph.D. (C.Sc.) in Economic Sciences, Associate Professor, Department of Management, NTU "KhPI". Authored and co-authored over 80 scientific and methodological publications.

Courses: Operations Management, Technological Management, Business planning, Management decisions

GENERAL DESCRIPTION OF THE COURSE

Summary	This course 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	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.
Types of classes and control	Lectures, workshops, consultations. Individual assignment. The course ends with a final exam.
Term	4

Student workload (credits) / Type of course	6 / Mandatory	Lectures (hours)	32	Workshops (hours)	32	Self-study (hours)	116
--	---------------	-------------------------	----	--------------------------	----	---------------------------	-----

Program competences	<p>GC01. The ability to realize own rights and responsibilities as a member of society, understand the values of civil (democratic) society and the need for its sustainable development, rule of law, human and civil rights and freedoms in Ukraine.</p> <p>GC03. The ability to abstract thinking, analysis, synthesis.</p> <p>GC04. The ability to apply knowledge in practical situations.</p> <p>GC05. Knowledge and understanding the subject area and understanding the professional activity.</p>
----------------------------	--

GC09. The ability to learn and to master modern knowledge.
 SC05. The ability to manage the organization and its units through the management functions realization.
 SC08. The ability to plan the organization activity and to manage the time.
 SC12. The ability to analyze and structure the problems of an organization, to form reasonable decisions.

Learning outcomes	Teaching and learning methods	Forms of assessment (continuous assessment CAS, final assessment FAS)
LO 06. To show skills of search, collecting, and analysis of information, calculation of indicators to substantiate management decisions.	Research work, interactive lectures with presentations, discussions, workshops, case-based learning	Written assignment and tests (FAS), practical assessment (CAS), online tests (CAS)
LO 08. To apply management methods to ensure the effectiveness of the organization.	Interactive lectures with presentations, discussions, workshops, case-based learning	Written assignment and tests (FAS), practical assessment (CAS), online tests (CAS)
LO 16. To demonstrate skills of independent work, flexible thinking, openness to new knowledge, be critical and self-critical.	Research work, interactive lectures with presentations, discussions, workshops, case-based learning	Written assignment and tests (FAS), practical assessment (CAS), online tests (CAS)

ASSESSMENT AND GRADING

Range s of points corres pondi ng to grades	core (points) for all types of learning activities	ECTS grading scale	The national grading scale	Allocation of grade points
	90-100	A	excellent	
	82-89	B	good	
	74-81	C		
	64-73	D	satisfactory	
	60-63	E		
	35-59	FX	Unsatisfactory (with the exam retake option)	
	0-34	F	Unsatisfactory (with mandatory repetition of the course)	

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

Course policy Students are expected to attend classes regularly, to get to class on time and stay for the duration of the class. In the case of absence, students will be required to submit all assignments to make up for the missed classes. Students are also expected to come to class having read all the required material and being ready to productively participate in the class discussions. Written assignments should be submitted before the specified deadlines.

COURSE STRUCTURE AND CONTENT

Lectures 1-2	The basics of operations management	Workshops 1-2	Understanding operations. Responsibilities of an operations manager. Discussion of modern manufacturing.	S e l f - s t u d y	Reading articles and watching video materials on historical development of operational management: industrial revolution, development of management theories and science. Learning about examples of modern industrial companies. Case of Tesla and SpaceX.
Lectures 3-4	Operational strategy	Workshops 3-4	Developing strategic goals. Case study “Manufacturing strategy at Zara”		Preparing assignments on strategic goal setting for various industrial situations. Reading articles on strategic management techniques.
Lectures 5-6	Production system	Workshops 5-6	Case study “Toyota production system”. Business game: Kanban system simulation.		Reading articles and watching video materials on Lean manufacturing techniques and history of Japanese manufacturing.
Lectures 7-8	Projects in operations management	Workshops 7-8	Project management software. Gantt charts. PERT charts.		Preparing assignments on critical path calculation using PERT charts and free software (ProjectLibre). Learning about agile project management tools.
Lectures 9-10	Decision-making in operations management	Workshops 9-10	Decision trees (business and machine learning approach). Mathematical methods in decision making		Problem solving using decision trees and statistical analysis.
Lectures 11-12	Managing the workflow and quality.	Workshops 11-12	Case study “Smartphone factory”		Analysis of video about smartphone factory quality control in terms of using lean manufacturing techniques.
Lectures 13-14	Performance of operations	Workshops 13-14	KPI setting and control		Reading articles about types of productivity and types of performance assessment.
Lectures 15-16	Information technologies in operations management	Workshops 15-16	Statistical process control (SPC). Using statistical software and AI for operations management.		Problem solving using software (Excel, Jamovi, WEKA).

RECOMMENDED READING

Compulsory

1. Schiraldi, M. M. (Ed.). (2013). Operations Management. <https://doi.org/10.5772/45775>
2. Chase, R. B., & Aquilano, N. J. (1995). Production and operations management: Manufacturing and services. Chicago: Irwin
3. Moynihan, G. P. (Ed.). (2018). Contemporary Issues and Research in Operations Management. <https://doi.org/10.5772/intechopen.71209>
4. Watt, A. (2014). Project Management. BCcampus. <https://opentextbc.ca/projectmanagement/>
5. 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>

Additional

1. Virasak, L. (2019). Manufacturing processes 4–5. Open Oregon Educational Resources. <https://open.umn.edu/opentextbooks/textbooks/manufacturing-processes-4-5>
2. Bourgeois, D. (2014). Information systems for business and beyond. The Saylor Foundation.
3. 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>
4. Muldoon, J. (2014) PMBOK® Summarized. <http://johnmuldoon.ie/wp-content/uploads/2014/08/PMBOK-Summarized.pdf>
5. Magee, J. F. (1964). Decision Trees for Decision Making. Harvard Business Review. <https://hbr.org/1964/07/decision-trees-for-decision-making>
6. Маркіна, І.А., Помаз, О.М., та Помаз, Ю.В. (2018) Операційний менеджмент: Навчальний посібник. Полтава: ПДАА.
7. Черепанова, В. О. (2014) Операційний менеджмент: практикум. Харків : НТУ «ХПІ»
8. Старченко, Г. В., Калінько, І. В., Косач, І. А. (2015) Операційний менеджмент. Київ: Кондор
9. Гевко, І. Б., Оксентюк, А. О., Галушак, М. П. (2008) Організація виробництва : теорія і практика. Київ : Кондор.
10. Гевко, І. Б. (2011) Методи прийняття управлінських рішень: підручник. Київ : Кондор.
11. Лепейко Т.І., Шматько Н.М. (2011) Операційний менеджмент. Харків: УІПА, 2011.
12. Воронкова, В. Г., Беліченко, А. Г., Желябін, В. О., Кириченко, І. Г., Ажажа, М. А. (2006) Операційний менеджмент. Львів : Магнолія.

Academic integrity

Students are expected to adhere to the Code of Ethics of Academic Relations and Integrity” of NTU “KhPI”.

The content of this syllabus is consistent with the course program.