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	**Business Administration**	**Department**	**Management**
Type of program	**Educational and Professional**	**Language of instruction**	**English**

LECTURER

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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

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 businesses, 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 test.
Term	6

Student workload (credits) / Type of course	5 / Elective	**Lectures (hours)**	24	**Workshops (hours)**	12	**Self-study (hours)**	114

Program competences	GC04. The ability to apply knowledge in practical situations GC09. The ability to learn and to master modern knowledge. GC10. The ability to conduct research at an appropriate level. 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.

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 test (FAS), practical tasks (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 test (FAS), practical tasks (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, discussions, workshops	Written assignment (CAS) and test (FAS)
LO2.4. To adapt existing methods and approaches to various business tasks, to perform the functions of a business integrator, to plan and to manage time resources.	Interactive lectures with presentations, discussions, workshops, case-based learning	Written assignment and test (FAS), practical tasks (CAS), online tests (CAS)

ASSESSMENT AND GRADING

Ranges of points corresponding 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		**100% Final assessment as a result of Tests (40%) and Continuous assessment (60%).** **40% Tests:** Test form in two modules **60% Continuous assessment:** written assignment, essay.
	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)		

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	**Workshop 1**	Understanding operations. Responsibilities of an operations manager. Discussion of modern manufacturing.	**Self-study**	Reading articles and watching video materials on historical development of operational management: industrial revolution, development of management theories and science. Leaning about examples of modern industrial companies. Case of Tesla and SpaceX.
Lectures 3-4	Operational strategy	**Workshop 2**	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	**Workshop 3**	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	**Workshop 4**	Project management software. Gannt charts. PERT charts.		Preparing assignments on critical path calculation using PERT charts and free software (ProjectLibre). Learning about agile project management.
Lectures 9-10	Managing the workflow and quality. Decision-making in operations management	**Workshop 5**	Case study “Smartphone factory” Mathematical methods in decision making		Problem solving using decision trees and statistical analysis. Problem solving using software (Excel, Jamovi, WEKA).
Lectures 11-12	Performance of operations	**Workshop 6**	KPI setting and control. Statistical process control (SPC). Using statistical software and AI for operations management.		Analysis of video about smartphone factory quality control in terms of using lean manufacturing techniques. Reading articles about types of productivity and types of performance assessment.

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., Галущак, 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.