

OPERATIONAL MANAGEMENT

Credit Value: 4 credits¹

Lecturer: Mirzoyan Ashot Hamletovich

A. Course outline

The course “Operational management” aims at the formation of the following skills and knowledge:

- knowledge of the interaction between different levels of management;
- ability to prepare operational strategies;
- knowledge of the principles and methods of a modern flexible approach to work, product or service development;
- knowledge of the traditional and innovative methods of business process analysis and optimization.

B. Textbooks

Chase, Richard B; Aquilano, Nicholas J; Jacobs, F. Robert. Production and Operations Management. Mcgraw Hill College. Publication date : January 1, 1998. 8th, 880 pages. ISBN-10: 0071152229.

C. Assessment details

The final grade consists of:

Types of assessment tools	Score
Express-test (15 × 1 point)	15
Classroom work (15 x 2 points)	30
Independent work (assignments) (15 × 2 points)	30
Test 1 (based on the theory of the 1st part of the course)	25
Test 2 (based on the theory of the 2nd part of the course)	25
Final report and its presentation (defense) based on the practice completed during the entire course (classroom work and homework assignments)	25
Final test (exam)	50

Grade	Minimum score	Maximum score
<i>Excellent</i>	170	200
<i>Good</i>	130	169
<i>Satisfactory</i>	80	129
<i>Unsatisfactory</i>	0	79

Typical tasks and other materials necessary to assess the learning outcomes:

According to the theoretical part, the following forms of knowledge acquisition control are provided:

- at the beginning of each class, a five-minute express-test based on the materials of the lecture (maximum 1 point for each test);
- upon completion of the thematic module there will be conducted a midterm test on the completed topics (maximum 25 points for each test).

For the practical part, the following forms of control of knowledge assimilation are provided:

- Active work in classes includes problems solution, games participation, teamwork, etc. (maximum 2

¹ 1 credit point is equal to 36 hours of total workload including in-class activities, self-study and exam writing

- points per class);
- The performance of independent tasks (tasks, exercises, analysis of results, etc.) (maximum 2 points per task);
- The final report is based on the work, which was independently accomplished during classes. The assessment consists of two components: a) design quality; b) the completeness of the submitted completed works (maximum 25 points for the final report).

D. Course outline

Topic 1. Operational strategies
Topic 2. Operational processes
Topic 3. Inventory management
Topic 4. Indicators. Process optimization and balancing
Topic 5. The system of key performance indicators (KPI)
Topic 6. Flexible approach, Agile methodology
Topic 7. Lean production
Topic 8. Quality management
Topic 9. The Six Sigma methodology
Topic 10. The Scrum methodology
Topic 11. Automation tools in operational management: BPM, Data Mining, Process Mining
Topic 12. Process modeling and model notation
Topic 13. Automation of processes by means of BPMS: jBPM and (or) SAP Solution Manager
Topic 14. Data Mining: the R toolkit for data analysis in operational management
Topic 15. Process Mining: detection of processes by information traces using ProM and/or SAP Celonis tools
Final exam