

Course name: OPERATIONS MANAGEMENT				
Course code	Course status	Semester	Number of ECTS credits	Classes fund
	Mandatory	III	6	2P + 2V
Study programs for which it is organized: ACADEMIC PROGRAMME IN ENGLISH LANGUAGE UNIVERSITY DEGREE PROGRAMME IN BUSINESS AND ECONOMICS BSC				
Conditionality to other courses: None				
Aim of studying the course: The aim of the course is to provide students with a comprehensive understanding of the principles of operations management, with particular emphasis on the application of quantitative methods to planning, decision-making, and optimization of business operations. Students will develop the ability to analyse operational problems, apply forecasting and optimization techniques, manage projects, plan production capacity, inventory, and distribution, and evaluate alternative solutions to improve operational efficiency and support effective managerial decision-making.				
Course content (teaching units, forms of individual student work, forms of knowledge testing) presented according to working weeks in the academic calendar:				
Preparatory week	Introduction to Operations Management - Productivity measurement, capacity utilization, efficiency			
I week	Forecasting I - Naive forecasting, moving averages, weighted moving averages, exponential smoothing			
II week	Forecasting II - Trend projection, MAD, MSE, MAPE, forecast evaluation			
III week	Decision-Making Models - Decision tables, uncertainty criteria,			
IV week	Decision-Making Models - EMV, EVPI, decision trees			
V week	Project Management (PERT/CPM) – concepts and examples			
VI week	Project Management I - Network diagrams, CPM, forward/backward pass, critical path, slack			
VII week	Project Management II - PERT, three-time estimates, project completion probability; introduction to crashing			
VIII week	Capacity Planning and Analysis - Design and effective capacity, bottleneck analysis, break-even analysis			
IX week	Midterm exam			
X week	Linear Programming - Mathematical formulation, production mix, graphical solution, Excel Solver			
XI week	Inventory Management - ABC analysis, EOQ, reorder point, basic safety stock			
XII week	Transportation Models - Transportation formulation, Northwest-Corner Rule, Least-Cost Method, Excel Solver			
XIII week	Guest lecture			
XIV week	Guest lecture			
Education methods: The course combines lectures, where theoretical concepts and frameworks are explained, with exercises focused on solving problems through quantitative methods, case studies, and software tools. Students are expected to engage in independent study of literature, assignments, and project tasks. Group work and discussions based on real-world examples will encourage collaborative learning and critical thinking.				
Student workload				
Per week 7 credits x 40/30 = 9 hours 20 minutes Structure: 1 hour and 30 minutes for lectures 1 hour and 30 minutes for exercise classes 6 hours and 20 minutes of student independent work, including consultations.		Per semester Total workload for the course 7 x 30 = 210 hours Structure: Teaching and final exam: 9 sati 20 min x 16 nedelja= 149 hours 20 min Necessary preparations before the beginning of the semester (administration, enrollment, certification): 9 hours 20 min x 2 = 18 hours 40 minutes. Additional work for preparation and taking the exam in the correctional period: 42 hours.		

Student obligations during classes:

- Regular attendance at lectures and exercises
- Active participation in class discussions and problem-solving sessions
- Completion of homework assignments and case studies
- Preparation of individual and/or group presentations on selected topics
- Participation in mid-term and final assessments

Literature:**Mandatory:**

1. Heizer, J., Render, B.: «Operations Management», Pearson, 11th edition, 2013

Additional/Recommended:

2. Ritzman, L., Krajewski, L.: «Foundations of Operations Management», Prentice Hall, 2003
3. Schroeder, R.: «Operations Management: Contemporary Concepts and Cases», McGraw Hill, 2007
4. Stevenson, W., «Operations Management», McGraw Hill, 14th edition, 2020
5. Goldratt, E. M.: «The Goal: A Process of Ongoing Improvement», North River Press, 2014

Learning outcomes (aligned with the outcomes of the study program):

Upon successful completion of the course, students will be able to:

- Explain the role of operations management and its importance for organizational competitiveness.
- Understand and discuss key theoretical concepts of operations management (strategy, capacity, location, layout, supply chain, lean systems).
- Apply forecasting, project management, and basic inventory models to real decision-making situations.
- Analyze and solve decision-making problems under risk using payoff tables, decision trees, and expected values.
- Formulate and solve linear programming models using graphical and simplex methods, for both maximization and minimization problems, including special cases.
- Integrate theoretical knowledge and quantitative methods to evaluate alternative solutions and support managerial decisions.

Forms of knowledge testing and assessment:

- Mid-term exam (theoretical and quantitative problems)
- Practical assignments (homework, case studies, project work)
- Final exam (comprehensive, combining theory and application)
- Active participation during lectures and exercises

Name and surname of teacher and assistant:

doc. dr Tamara Backović, dr Bojan Pejović

Specifics that need to be emphasized for the course:

The course emphasizes a balanced integration of theory and quantitative methods. In the first part of the course, students gain broad understanding of operational concepts and basic analytical tools. In the second part, the focus shifts to decision-making models and linear programming, enabling students to develop advanced analytical and problem-solving skills. The use of software (e.g., Excel, Solver) will be encouraged to support practical applications. Critical thinking, teamwork, and communication of analytical results are integral elements of the learning process.