

Study program: Mechanical engineering			
Type and level of studies: Master studies			
Course unit: Storage & Distribution Systems			
Teacher in charge: Prof. Dr Goran Marković			
Language of instruction: English			
ECTS: 6			
Prerequisites: None			
Semester: Winter			
Course unit objective: The aim of the course is to introduce students with the theoretical and practical knowledge in the field of storage, picking and distribution of goods.			
Learning outcomes of the Course unit Students gain knowledge to solve problems of storage and distribution of goods. Application of knowledge in the planning, design, management and maintenance of warehouses and distribution centers.			
Course unit contents <i>Theoretical classes</i> The place and role of storage systems in the logistics system. Storage system and storage requirements. Organization of warehouse operation. Elements and processes in the warehouse. Areas of optimization in warehouses (location, inventory management, storage technology and picking). Locating warehouse. The methodology and models for determining the location. Storage technology. Technology and design of the warehouse. Modeling and simulation of warehouse systems operation. Managing and optimizing inventory. Determination of the desired state and inventory management strategies. Picking - preparation of goods for distribution, concepts and technologies, trajectory optimization and effectiveness. Picking technology. Fundamentals of distribution systems and distribution networks. The structure and costs of the distribution network. <i>Practical classes</i> Solving specific tasks and problems in the areas of warehouse optimization. Introduction to the basic problems of formulating and solving location problems, inventory management. Visit to distribution centres.			
Literature Gwynne Richards: Warehouse Management: A Complete Guide to Improving Efficiency and Minimizing Costs in the Modern Warehouse, Chartered institute for logistics and Transport, 2011 Mulcahy, D.E., Sydow, J.: A supply chain logistics program for warehouse management, 9th edition, Boston, McGraw-Hill/Irwin, 2009			
Number of active teaching hours			Other classes
Lectures: 3	Practice: 1	Other forms of classes: 1	
Teaching methods Active participation of students in the classroom. Independent work of students in the development of practical examples and tasks. Lectures. Auditory exercises. Consultation.			
Examination methods (maximum 100 points)			
Exam prerequisites	No. of points:	Final exam	No. of points:
Student's activity during lectures	5	oral examination	
practical classes/tests	5	written examination	30
Seminars/homework	30	
Project	30		
Other			
Grading system			
Grade	No. of points	Description	
10	91-100	Excellent	
9	81-90	Exceptionally good	
8	71-80	Very good	
7	61-70	Good	
6	51-60	Passing	
5	Less than 50	Failing	