

<b>Study programme(s):</b> Teaching Informatics (IC)			
<b>Level:</b> master			
<b>Course title:</b> Operations research (IA423)			
<b>Lecturer:</b> Sanja Đ. Rapajić			
<b>Status:</b> elective			
<b>ECTS:</b> 8			
<b>Requirements:</b> none			
<b>Learning objectives</b> Acquiring knowledge about mathematical models related to some optimization problems from economy, industrial engineering and other fields. Introduction to basic operations research methods, which could be used for solving these problems. Introduction to the well-known optimization software.			
<b>Learning outcomes</b> The basic knowledge about constrained optimization problems. Acquiring skills about different techniques in specific fields of operations research and their applications in practice by using appropriate software.			
<b>Syllabus</b> <i>Theoretical instruction</i> Methodology of operations research. Linear programming. Duality. Transportation problems. Quadratic programming. Multi-criteria programming. Network models. Dynamic programming. Game theory. <i>Practical instruction</i> Exercises that follow the theoretical lessons.			
<b>Literature</b> 1.K. Surla, Z. Lozanov-Crvenković, <i>Operaciona istraživanja</i> , PMF, Novi Sad, 2002. 2.S. Krčevinac, M. Čangalović, V. Kovačević-Vujčić, M. Martić, M. Vujošević, <i>Operaciona istraživanja 1 i 2</i> , FON, Beograd, 2004. 3.W. L. Winston, <i>Operations Research-Applications and Algorithms</i> , Duxbary Press, 2003. 4. F.S. Hillier, G.J.Lieberman, <i>Introduction to Operations Research</i> , McGraw -Hill Science, 2005.			
<b>Weekly teaching load</b>			Other:
Lectures: 3	Exercises: 3	Other forms of teaching:	
<b>Teaching methodology</b> Lectures are presented using classical teaching methods. Exercises are used to practice and analyse typical problems and their solutions. Optimization software is available to students. The ability of application of theoretical knowledge is checked through independent solving of exercises on the written exam. The final exam is oral and a student is supposed to demonstrate general understanding of the presented theoretical material.			
<b>Grading (maximum number of points 100)</b>			
<b>Pre-exam obligations</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
Written exam	50	Oral exam	50