

<b>Study Programme:</b> Mathematics (MA), Applied Mathematics (MB), Master in Mathematics Teaching (MP)			
<b>Course Unit Title:</b> Operations Research			
<b>Course Unit Code:</b> MB36			
<b>Name of Lecturer(s):</b> Sanja Rapajić			
<b>Type and Level of Studies:</b> Master			
<b>Course Status (compulsory/elective):</b> elective			
<b>Semester (winter/summer):</b> winter			
<b>Language of instruction:</b> Serbian			
<b>Mode of course unit delivery (face-to-face/distance learning):</b> face-to-face			
<b>Number of ECTS Allocated:</b> 7.5			
<b>Prerequisites:</b> none			
<b>Course Aims:</b> Acquiring knowledge on 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> Basic knowledge about constrained optimization problems. Acquiring skills of different techniques in specific fields of operations research and their applications in practice by using the appropriate software.			
<b>Syllabus:</b> <i>Theory</i> Methodology of operations research. Linear programming. Duality. Transportation problems. Quadratic programming. Multi-criteria programming. Network models. Dynamic programming. Game theory. <i>Practice</i> Exercises that follow the theoretical lessons.			
<b>Required Reading:</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> , Duxbury Press, 2003. 4. F. S. Hillier, G. J. Lieberman, <i>Introduction to Operations Research</i> , McGraw -Hill Science, 2005.			
<b>Weekly Contact Hours:</b> 6	<b>Lectures:</b> 4	<b>Practical work:</b> 2	
<b>Teaching Methods:</b> Lectures are presented using classical teaching methods. Exercises are used to practice and analyze typical problems and their solutions. Optimization software will be available to students. The ability of application of theoretical knowledge is checked through independent solving of exercises on written exam. The final exam is oral and a student is supposed to demonstrate general understanding of the presented theoretical material.			
<b>Knowledge Assessment (maximum of 100 points):</b>			
<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
written exam	50	oral exam	50
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			