

<b>Study Programme:</b> Computer Science – Master			
<b>Course Unit Title:</b> Graph Theory			
<b>Course Unit Code:</b> CS451			
<b>Name of Lecturer(s):</b> Mirjana Mikalački			
<b>Type and Level of Studies:</b> Master Academic Studies			
<b>Course Status (compulsory/elective):</b> Compulsory			
<b>Semester (winter/summer):</b> Winter			
<b>Language of instruction:</b> Serbian (primary), English (secondary)			
<b>Mode of course unit delivery (face-to-face/distance learning):</b> Face-to-face			
<b>Number of ECTS Allocated:</b> 6			
<b>Prerequisites:</b> Discrete Structures 1			
<b>Course Aims:</b> Teaching students to understand and use various results in graph theory, and to master basic algorithms on graphs.			
<b>Learning Outcomes:</b> <i>Minimal:</i> At the end of the course, it is expected that students know all basic concepts of graph theory and understand standard theorems. Also, they should be familiar with basic algorithms on graphs. <i>Desirable:</i> At the end of the course, it is expected that successful students are able to prove more complex theorems, as well as to comprehend the covered topics as a whole, and solve some standard problems that they have not encountered before.			
<b>Syllabus:</b> Graphs and basic graph structures, weighted graphs, trees and search algorithms on trees. Flows in graphs, min-max theorem. Vertex connectivity and edge connectivity. Planar graphs - basic properties. Stable sets and cliques. Vertex colorings. Matchings, algorithms. Edge colorings. Hamiltonian cycles.			
<b>Required Reading:</b> <ul style="list-style-type: none"> <li>• J.A. Bondy, U.S.R. Murty: Graph Theory, Springer, 2008.</li> <li>• D.B. West, Introduction to Graph Theory, Prentice Hall, 2001.</li> </ul>			
<b>Weekly Contact Hours:</b> 4	<b>Lectures:</b> 2	<b>Practical work:</b> 2	
<b>Teaching Methods:</b> Blackboard lectures, blackboard exercises.			
<b>Knowledge Assessment (maximum of 100 points):</b>			
<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Colloquia	30	Oral exam	70
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			