

## Social Network Analysis

<b>Study program</b>		Electrical Engineering and Computing		
<b>Module</b>		Software Engineering		
<b>Type and level of studies</b>		master academic studies		
<b>Course title</b>		Social Network Analysis		
<b>Professor (for lectures)</b>		Protić Ž. Jelica, Mišić J. Marko		
<b>Professor/assistant (for practice)</b>		Mišić J. Marko		
<b>Professor/assistant (for LAB)</b>		Mišić J. Marko		
<b>Number of ECTS</b>		6	<b>Type of the course (mandatory/elective)</b> elective	
<b>Prerequisite</b>	no additional prerequisite			
<b>Objective of the course</b>	Introducing students with concepts of social network analysis from theory, methodology, and software aspects. Social network analysis applications: real social networks on the Internet, such as Facebook, LinkedIn, and Twitter, business and communication networks, co-authorship and citation networks in scientific production. Gaining necessary mathematical skills and software tools knowledge in order perform quantitative analysis of social networks and their visualization.			
<b>Learning outcomes of the course</b>	Students will be able to: define research goals in the social networks domain, obtain social network data in legal and ethical way, perform the formal modeling of the network and its actors, perform statistical and collaborative analysis of the networks using software tools, and interpret the results.			
<b>Course Contents</b>				
<b>Theoretical contents</b>	Social network definition and graph representation. Data retrieval and representation; network modeling and choice of directed, undirected, and weighted graphs. Basic network metrics, centrality measures; distance measures in networks; node role detection. Community detection and network clustering. Small world networks. Ego networks. Dynamic behavior of networks. Network visualisation.			
<b>Practical part (practices, LAB, study research work)</b>	Introduction to software tools for social network analysis: Gephi, UCINET, NodeXL, Pajek. Language for statistical analysis R. Data retrieval and transformation from real social networks, research paper databases, and web pages. Centrality measures and network visualization. Practical project.			
<b>Literature</b>				
	1 D. Hansen, B. Shneiderman, M. Smith. 2010. Analyzing Social Media Networks with NodeXL: Insights			
	2 Charles Kadushin, Understanding Social Networks: Theories, Concepts and Findings, Oxford			
	3 Christina Prell, Social Network Analysis: History, Theory and Methodology, SAGE Publications Ltd,			
	4 Hanneman, Robert A. and Mark Riddle. 2005. Introduction to social network methods. Riverside,			
	5			
<b>Number of ECTS</b>				
<b>Lectures</b>	<b>Practices</b>	<b>LAB</b>	<b>Study research work</b>	<b>Other activities</b>
2	2	1		
<b>Teaching Methods</b>	Lectures, data retrieval and analysis, case study, interpretation of results.			
<b>Grading methods (max. number of points is 100)</b>				
<b>Pre-exam assesments</b>	<b>points</b>	<b>Final examination</b>		<b>points</b>
<b>activity during lectures</b>	0	<b>written exam</b>		40
<b>practical assesments</b>	0	<b>oral exam</b>		0
<b>mid-term exams</b>	0			
<b>seminars</b>	60			