

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Computing and Informatics		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Graph Theory		
Lecturer (for lectures)		Milovanović Ž. Igor		
Lecturer/associate (for exercises)		Matejić M. Marjan		
Lecturer/associate (for OFE)				
Number of ECTS	3	Course status (obligatory/elective)	Elective	
Prerequisites				
Course objectives	This course offers an introduction to graph theory, with an emphasis on applications and modelling.			
Course outcomes	Students should be qualified to apply knowledge from graph theory in various areas of engineering.			
Course outline				
Theoretical teaching	Definitions. Node degree. Representations. Diameter, excentriciy, radius, cener. Graph sequences. Paths in graph. Connectivity. Components of connectivity. Shortest paths. Bipartite graphs. Graph isomorphism. Spectar of graph. Euler' s graphs. Hamilton's graphs. The sailsman problem. Euler theorem. Trees. Spanning trees. Minimal spannig trees. Prim, Crucal, and Max-Plotkin algorithms. Transformations of spanning trees. Three coding. Internal and external stability of graphs. Covering and matching. Logical permanent. Fundamental cycles and intersections. Graph coloring.			
Practical teaching (exercises, OFE, study and research)	Oral exercises that exemplify problem statements examined in the lectures			
Textbooks/references				
1	Graph Theory and its Applications, J.L. Gross & J. Yellen, Chapman & Hall/CRC, 2nd Edition, ISBN 1-58488-505-X.			
2	J. A. Bondy and U. S. R. Murty, Graph Theory with Applications, NORTH-HOLLAND, New York • Amsterdam • Oxford, 1982.			
3	course web page http://cs.elfak.ni.ac.rs/nastava			
4				
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	1	0	0	0
Teaching methods	Lectures, oral exercises.			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam	Points	
Activity during lectures	10	Written exam	20	
Exercises		Oral exam	40	
Colloquia	30			
Projects				