

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Electronics - Multimedia technologies		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Computer Networks Design		
Lecturer (for lectures)		Nikolić R. Tatjana		
Lecturer/associate (for exercises)		Nikolić S. Goran		
Lecturer/associate (for OFE)		Nikolić S. Goran		
Number of ECTS	5	Course status (obligatory/elective)	Elective	
Prerequisites				
Course objectives				
This subject is an upgrade of acquired knowledge of students in the field of computer networks in order to qualify them for the process of designing and implementing different types of computer networks.				
Course outcomes				
The knowledge that a student will receive by studying this course is necessary for the design, implementation, configuration and maintenance of computer networks using appropriate protocols and services.				
Course outline				
Theoretical teaching				
Organization and structure of modern computer networks, especially the Internet. Basic principles of networking, switching, routing. Characteristics of network equipment. Description of advanced internet procedures and technologies that support the efficient and secure interconnection of distributed applications and structured data. Algorithms and procedures for routing, flow and congestion control, as well as ensuring the quality of services for different applications. Security mechanisms on the Internet and procedures for preventive response to threats to network security. Advanced techniques for interconnecting applications based on standard and intelligent computing network models. Configuring network resources and efficient interconnection of different distributed resources. Configuration of virtual logical networks, lines between switches, routing between virtual networks. VTP and STP protocol. Wireless networks. Building a virtual private network and the implementation of the interconnection of distributed applications over standard Internet platform.				
Practical teaching (exercises, OFE, study and research)				
The student should do a set of laboratory exercises related to the design and implementation of a local network based on virtual networks using standard concepts, services and protocols.				
Textbooks/references				
1	Wayne Lewis, LAN Switching and Wireless, Cisco Press, Indianapolis, USA, 2009.			
2	Computer networks design, PowerPoint presentations for all lectures, available on the website of the course			
3				
4				
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
3	1	1	0	0
Teaching methods				
Lectures, exercises, labs, homeworks, colloquia, projects, consultations				
Grade (maximum number of points 100)				
Pre-exam duties		Points	Final exam	Points
Activity during lectures			Written exam	30
Exercises		20	Oral exam	30
Colloquia		20		
Projects				