

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Communications and Information Technologies - System Engineering and Radio-Communications		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Computer Communications and Internet Access II		
Lecturer (for lectures)		Stanković Ž. Zoran, Dončov S. Nebojša		
Lecturer/associate (for exercises)		Milijić R. Marija		
Lecturer/associate (for OFE)		Milijić R. Marija		
Number of ECTS	5	Course status (obligatory/elective)	Elective	
Prerequisites				
Course objectives				
Acquiring theoretical and practical knowledge related to the usage of computers and network equipment for the realization of advanced communication and network architectures for Internet access.				
Course outcomes				
Knowing the current methods and techniques to connect and properly configure network equipment in order to establish advanced TCP/ IP network architectures for Internet access. The ability to apply modern switches and routers with dynamic routing protocols in the implementation of heterogeneous networks for Internet access based on IEEE standard 802.3/802.1 /802.15. Ability to administer heterogeneous networks for Internet access.				
Course outline				
Theoretical teaching				
Internet access based on the IEEE 802.11 standard. Wi-Fi and service sets. Virtual Local Area Network (VLAN) architecture. Organization of VLAN communication ports and STP protocol. Static NAT, Dynamic NAT and PAT. Advanced concepts in routing. OSPF and EIGRP protocols. External BGP protocol and its implementation. Wide Area Network (WAN). Hardware implementation of point-point WAN. CC (Cloud Computing) communication infrastructure. SNMP protocol for managing Internet access networks. Basics of designing Internet access heterogeneous networks based on IEEE standards 802.3 / 802.11 / 802.15.				
Practical teaching (exercises, OFE, study and research)				
Auditory exercises: Solving problems related to configuration of the network equipment and Internet access network architectures realization using standard simulators. Laboratory exercises: Practical work related to configuration of routers and switches in a complex heterogeneous network environment based on 802.3/802.11/802.15 standards.				
Textbooks/references				
1	V. Stallins, Data & Computer Communications, 10th edition, Pearson Education Limited, 2013.			
2	D. Comer, Internetworking with TCP/IP, СЕТ Библиотека, 2001.			
3	A. Tanenbaum, D. Wetherall, Computer Networks, 5th edition, Микро књига, 2013.			
4	W. Odom, CCENT/CCNA ICND1 Official Exam Certification Guide, 2nd edition, Cisco Press, 2007.			
5	W. Odom, S. Hogg, CCNA Routing and Switching ICND2 Official Cert Guide, Cisco Press, 2017.			
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	1	2	0	0
Teaching methods				
Lectures, auditory exercises, practical laboratory work, homework, consultations				
Grade (maximum number of points 100)				
Pre-exam duties		Points	Final exam	
Activity during lectures		5	Written exam	
Exercises		25	Oral exam	
Colloquia		30		
Projects				