

Specification for the book of courses

Study program		Computing and Informatics		
Module		Computer Systems Security		
Type and level of studies		Master studies		
The name of the course		Computer Network Security		
Lecturer (for lectures)		Milovanović I. Emina, Ćirić M. Vladimir		
Lecturer/associate (for exercises)		Dimitrijević M. Aleksandar		
Lecturer/associate (for OFE)				
Number of ECTS		4	Course status (obligatory/elective)	Elective
Prerequisites		Computer networks		
Course objectives		The aim of the course is for the students to gain insight into the potential security weaknesses and obtain the basic knowledge to enhance the security, as well as to gain the knowledge and skills to apply security techniques in order to increase the security of computer networks.		
Course outcomes		It is expected for the students to be able to analyse the security aspects of computer networks, and to be able to plan the strategy to increase security. It is also expected that the student has a knowledge to use tools, as well as to implement security protocols in order to increase security of the network		
Course outline				
Theoretical teaching		The objectives of security: data protection, data integrity, authentication. Cryptographic algorithms: public and shared keys. Key exchange protocols. Digital signature. The security aspects of different network layers. Protocols and techniques for protection against specific types of attacks. Application of security protocols in data protection. Protecting data integrity and authentication (Kerberos, SSL / TLS. IPSec, VPN, PK). Application tools and firewall for system level protection. Attacks. Computer viruses. Security of wireless networks.		
Practical teaching (exercises, OFE, study and research)		Work through the examples set of laboratory exercises. Protection of network equipment. RADIUS and AAA servers. Firewall. Configuration of virtual private networks (VPN). Security of wireless networks. Typical attacks.		
Textbooks/references				
1	William Stallings, "Cryptography and Network Security: Principles and Practice (6th Edition)", Prentice hall, 2013			
2	Michael Watkins, Kevin Wallace, "CCNA Security", Cisco Press, 2008, ISBN 9781587202209			
3				
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		
Teaching methods				
Grade (maximum number of points 100)				
Pre-exam duties		Points	Final exam	Points
Activity during lectures		10	Written exam	
Exercises			Oral exam	50
Colloquia		20		
Projects		20		