

1.	Course Title	Computer Networks and Security		
2.	Code	F18L2W014		
3.	Study program	Software engineering and information systems		
4.	Study Program Organizer	Faculty of Computer Science and Engineering		
5.	Degree (first, second, third cycle)	first cycle		
6.	Academic year / semester 2 / winter / mandatory	7. ECTS credits 6		
8.	Teacher	Ph.D. Aleksandra Kanevche, associate professor Igor Mishkovski, associate professor Dejan Spasov, associate professor Anastas Mishev, assistant professor Sasho Gramatikov, assistant professor Sashko Ristov, assistant professor Miroslav Mirchev		
9.	Course enrollment prerequisites	Архитектура и организација на компјутери		
10.	Course program goals (competencies): Introduction to the basic concepts of computer networks and security. The student will acquire knowledge related to the network architecture, network protocols, and networking, as well as the main concepts of network security. The student will get acquainted with the main components and applications of the TCP / IP protocol suite.			
11.	Course program content: (1) Computer networks and the Internet, service, protocol, edge and core network, multi-layered, network features. (2) Application layer, network applications, HTTP, FTP, SMTP, DNS, P2P. (2) Transport layer, multiplexing, UDP, TCP, stall control. (2) Network layer, forwarding and routing, virtual circuits and datagram networks. (2) Routing, IP, routing algorithms, intra-AS routing. (2) Access networks, types and features. (2) Network Security, Fundamentals of Cryptography, Integrity, Authentication, PGP, SSL, Operational Security			
12.	Learning methods: Lectures using presentations, interactive lectures, exercises (using equipment and software packages), teamwork, case studies, invited guest lecturers, independent preparation and defense of a project assignment and seminar work.			
13.	Total available time	6 ECTS x 30 hours = 180 hours		
14.	Distribution of the available time	30 + 60 + 0 + 15 + 75 = 180 hours		
15.	Teaching activity forms	15.1.	Lectures – theoretical teaching	30 hours

		15.2.	Exercises (laboratory, auditory), seminar papers, teamwork	60 hours		
16.	Other activity forms	16.1.	Project Tasks	0 hours		
		16.2.	Independent Learning Tasks	15 hours		
		16.3.	Home learning	75 hours		
17.	Assessment methodology					
	17.1.	Tests		10 points		
	17.2.	Seminar paper/project (presentation: written and oral)		10 points		
	17.3.	Activity and learning		10 points		
	17.4.	Final exam		70 points		
18.	Assessment criteria (points/grade)		up to 50 points	5 (five) (F)		
			51 to 60 points	6 (six) (E)		
			61 to 70 points	7 (seven) (D)		
			71 to 80 points	8 (eight) (C)		
			81 to 90 points	9 (nine) (B)		
			91 to 100 points	10 (ten) (A)		
19.	Course completion and final exam requirements	Realized activities 15.1 and 15.2				
20.	Teaching Language	Macedonian and English				
21.	Teaching quality evaluation method	Internal evaluation mechanisms and questionnaires				
22.	Course Material					
	22.1.	Mandatory course material				
		No	Author	Title	Publisher	Year
		1	Kurose Ross	Computer networking Top-Down Approach A	Pearson	2016
	22.2.	Additional course material				
		No.	Author	Title	Publisher	Year

