

1.	Course title	Next generation networks		
2.	Course code	KMET-Z-03		
3.	Study program	Computer networks and e-technologies		
4.	Unit offering the course	FCSE		
5.	Undergraduate/master/PhD	Master		
6.	Year/semester 1(2)/summer/compulsory	7. ECTS: 6		
8.	Teacher(s)	Assist. Prof. Sonja Filiposka		
9.	Course prerequisites	None		
10.	Goals (competences): After successfully completing the course, the student is expected to understand the architecture of the next generation networks. The student will comprehend the methods of user access and the real-time multimedia transmission technologies.			
11.	Course content: Introduction to the next generation networks (NGN). NGN core. MPLS. User access via fixed networks and technologies. User access via wireless technologies. International NGN settings. Voice, video and data in NGN environment. NGN networks and topologies. Enumeration and ENUM. IMS (IP Multimedia Subsystem). Migrating towards NGN.			
12.	Teaching methods: Lectures supported by slide presentations, interactive lectures, trainings (using lab equipment and software packages), team work, case studies, invited guests and lectures, individual practical assignments presentations, seminar paper, e-learning (forums, consultations).			
13.	Total available time	6 ECTS x 30 hours = 180 hours		
14.	Distribution of the available time	30 + 15 + 135 = 180 hours		
15.	Teaching activities	15.1.	Lectures	30 hours
		15.2.	Training (labs, problem solving), seminar and team work	15 hours
16.	Other activities	16.1.	Project work	60 hours
		16.2.	Self study	25 hours
		16.3.	Home work	50 hours
17.	Grading			
	17.1.	Tests		45 points
	17.2.	Seminar work/project (written or oral presentation)		45 points
	17.3.	Active participation		10 points
18.	Grading criteria		to 59 points	5 (five) (F)
			from 60 to 68 points	6 (six) (E)
			from 69 to 76 points	7 (seven) (D)
			from 77 to 84 points	8 (eight) (C)
			from 85 to 92 points	9 (nine) (B)
			from 93 to 100 points	10 (ten) (A)

19.	Final exam prerequisites	Successfully completed activities 15.1 and 15.2				
20.	Course language	Macedonian and English				
21.	Quality assurance methods	Internal evaluation and student questionnaires				
22.	Literature					
	22.1.	Compulsory				
		No.	Authors	Title	Publisher	Year
		1.	Muhammad Afaq Khan	Building Service-Aware Networks: The Next-Generation WAN/MAN	Cisco Press	2009
		2.	Thomas Plevyak, Veli Sahin	Next Generation Telecommunications Networks, Services, and Management	Wiley-IEEE	2010
		3.	Azhar Sayeed, Monique J. Morrow	MPLS and Next-Generation Networks: Foundations for NGN and Enterprise Virtualization	Cisco Press	2006
		Additional				
		No.	Authors	Title	Publisher	Year
	22.2.	1.	Jingming Li Salina, Pascal Salina	Next Generation Networks: Perspectives and Potentials	Wiley	2008
	2.	Vinod Joseph, Brett Chapman	Deploying QoS for Cisco IP and Next Generation Networks: The Definitive Guide	Morgan Kaufmann	2009	
3.						