

1.	Course title	<b>Random processes in computer networks</b>		
2.	Course code	KMET-I-06		
3.	Study program	<b>Computer networks and e-technologies</b>		
4.	Unit offering the course	<b>FCSE</b>		
5.	Undergraduate/master/PhD	<b>Master</b>		
6.	Year/semester 1(2)/winter/elective	7. ECTS: <b>6</b>		
8.	Teacher(s)	Assist. Prof. Dejan Spasov		
9.	Course prerequisites	None		
10.	Goals (competences): After successfully completing the course, the student is expected to be able to perform advanced analysis of random processes.			
11.	Course content: Definition of a random process. Random process characteristics: mathematical expectation, correlation function, and dispersion. Linear transformation of a random process. Differential forms and integration of random processes. Canonical decomposition. Stationary random processes. Markov chains. Markov processes. Poisson and Winner process. White noise. Birth and death processes. Queuing.			
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		40 points
	17.2.	Seminar work/project (written or oral presentation)		45 points
	17.3.	Active participation		15 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.	Sheldon Ross	Stochastic Processes	John Wiley & Sons	1996
		2.	Athanasios Papoulis	Probability, Random Variables and Stochastic Processes	Mc-Graw Hill	1991
		3.	Wai-Ki Ching Michael K.	Ng Markov Chains: Models, Algorithms and Applications	Springer Science+Business Media, Inc.,	2006
		Additional				
		No.	Authors	Title	Publisher	Year
	22.2.	1.				
	2.					
3.						