1.	Course title	**Random Processes**	
2.	Course code	KK-I-04	
3.	Study program	**Coding and cryptography**	
4.	Unit offering the course	**FCSE**	
5.	Undergraduate/master/PhD	**Master**	
6.	Year/semester 1(2)/winter/elective	7. ECTS: **6**	
8.	Teacher(s)	prof. d-r Verica Bakeva prof. d-r Zaneta Popeska	
9.	Course prerequisites	None	
10.	Goals (competences): Random processes are mathematical model for many processes in computer science. The purpose of this course is introducing the theory of random processes, studying the characteristics of special random processes, in order to use them for modeling of real processes.		
11.	Course content: - Random processes: definition, characteristics, classification, transformations. Stationary of random processes. Processes with independent and stationary increments. - Markov processes with discrete and continuous set of states: birth-dead processes, Markov chain, Embedded Markov chain. - Special random processes: random walk, Poisson process, Wiener process, branching processes. Renewal processes. - Queuing theory.		
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+30+40+40+40 = 180 hours	

15.	Teaching activities	15.1.	Lectures	30 hours
		15.2.	Training (labs, problem solving), seminar and team work	30 hours
16.	Other activities	16.1.	Project work	40 hours
		16.2.	Self study	40 hours
		16.3.	Home work	40 hours

17.	Grading		
	17.1.	Tests	50 points
	17.2.	Seminar work/project (written or oral presentation)	30 points
	17.3.	Active participation	20 points
18.	Grading criteria	to 50 points	5 (five) (F)
		from 51 to 60 points	6 (six) (E)

		from 61 to 70 points	7 (seven) (D)
		from 71 to 80 points	8 (eight) (C)
		from 81 to 90 points	9 (nine) (B)
		from 91 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.	Papullis, A.	Probability, Statistics and Stochastic Processes	McGraw-Hill, Inc., New York	2002
		2.	Bakeva, V., Georgieva	Stochastic Processes	Handouts for seminar in frame of the DAAD project "Center of Excelence for Applications of Mathematics"	2006
		3.	D.R.Cox, H.D.Miller	The Theory of Stochastic Processes	Chapman and Hall	1994
	22.2.	Additional				
		No.	Authors	Title	Publisher	Year
		1.				
		2.				
		3.				