

1.	Course	Theory of Stochastic Processes			
2.	Code	INF-S26			
3.	Study programme	Informatics			
4.	Study programme organized by	Faculty of Computer Science and Engineering			
5.	Cycle	Third - PhD			
6.	Academic year / semester winter/summer/elective	first/second	7.	ECTS credits	7,5
8.	Teacher	Prof. D-r Verica Bakeva			
9.	Prerequisites	None			
10.	Course programme goals (competences): The goal of this course is studying the theory of stochastic processes, in general and some special random processes, in order to use them for modeling of real processes.				
11.	Course syllabus: Characteristics of random processes, stationary, ergodicity, spectral analyses. Markov processes. Branching processes: controlled stochastic processes, migration processes. Limit theorems. Random sums of random variables and their applications. Renewal theory and regeneration processes.				
12.	Teaching methods: Classes supported with slide presentations, interactive teaching, project works, reading actual papers, books, e-learning materials, forums and consultations, self-study.				
13.	Total fund of work hours	7,5 ECTS x 30 h = 225 h			
14.	Available hours distribution	45+45+45+45+45 = 225			
15.	Teaching activities	15.1.	Theoretical classes	45 h	
		15.2.	Practical classes (labs, exercises), seminars, team work	45 h	
16.	Other activities	16.1.	Project tasks	45 h	
		16.2.	Self study	45 h	
		16.3.	Homework	45 h	
17.	Grading				
	17.1.	Tests	70 points		
	17.2.	Seminar work/ project (presentation: written and oral)	20 points		
	17.3.	Active participation	10 points		
18.	Grading criteria (points/grade)	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.	Conditions for attending the final exam	Successful completion of activities 15.1 and 15.2
20.	Language	Macedonian or English
21.	Quality assessment	Internal evaluation and student pools

22.	Literature					
	22.1.	Compulsory				
		No.	Author	Title	Publisher	Year
		1.	Papoulis, A.	Probability, Random Variables and Stochastic Processes	McGraw-Hill, Inc., New York	2002
		2.	Ibrahim Rahimov	Random Sums And Branching Stochastic Processes	Lecture Notes in Statistics, Springer-Verlag	1995
	3.	Georg Lindgren	Lectures on Stationary Stochastic Processes	Lund University	2006	
	22.2.	Additional				
		No.	Author	Title	Publisher	Year
		1.		Actual scientific papers relevant for the considered topic		
		2.				
3.						