1.	Course			*Ecological Modeling*	
2.	Code			KNI_E23	
3.	Study programme			Computer Science and Engineering PhD study programme	
4.	Study programme organized by			FCSE	
5.	Cycle			Third – PhD	
6.	Academic year / semester winter/summer/elective			7. ECTS credits 7,5	
8.	Teacher			Prof. d-r Kosta Mitreski	
9.	Prerequisites			None	
10.	Course programme goals (competences): The students will be able to apply the physical and mathematical models in ecological modeling.				
11.	Course syllabus: System ecology theoretical basics. Physical and mathematical models. Analytical basics of ecological modeling. Elements and procedures of ecological modeling. Conceptual models. Models as tools for prediction and management. Designing ecological and living environment models. Overview of applied ecological models. Ecological models types. Choosing the right model. Choosing the structure and model complexity. Preparing the data needed for modeling. Data mining. Data post-processing. Using tools for ecological model generation. Applying the models for prediction of the future system ecological states. Decision making models.				
12.	Teaching methods: Classes supported with slide presentations, interactive teaching, lab equipment and other software packages, teamwork, case studies, invited guest lecturers, presentations of project works, e-learning materials, forums and consultations.				
13.	Total fund of work hours			7,5 EKTC x 30 h = 225 h	
14.	Available hours distribution			45+30+150 = 225	
15.	Teaching activities	15.1.	Theoretical classes	45 h	
		15.2.	Practical classes (labs, exercises), seminars, team work	30 h	
16.	Other activities	16.1.	Project tasks	50 h	
		16.2.	Self study	50 h	
		16.3.	Homework	50 h	
17.	Grading				
	17.1.	Tests		40 points	
	17.2.	Seminar work/ project (presentation: written and oral)		50 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.	Jorgensen S.E, Bendoricchio G.	Fundamentals of Ecological Modelling, 3rd Edition	Elsevier	2001
		2.		Ecological Modelling Journals	Elseiver	2001-2009
		3.	Dzeroski S., Struyf J.	Knowledge Discovery in Inductive Database	Springer	2007
	22.2.	Additional				
		No.	Author	Title	Publisher	Year
		1.				
		2.				
		3.				