1.	Course		Spatial-temp	oral GIS Analysis					
2.	Code		KNI_E24						
3.	Study programme		Computer Science and Engineering PhD study						
			pro	gramme					
4.	Study programme organized by		I	FCSE					
5.	Cycle		Third – PhD						
	Academic year / semester								
6.	winter/summer/elective	7.	7. ECTS credits 7,5						
8.	Teacher		Prof. d-r Kosta Mitreski						
9.	Prerequisites		None						
	Course programme goals (competences):								
10.	The students will be able to apply the GIS tools and develop algorithms for spatial-temporal data analysis.								
	Course syllabus:								
11.	Introduction to GIS. Example GIS applications. Geographical data (types, relations, measurements, dimensions, aggregations). Visualizing spatial data (GIS architecture, raster and vector based, conversions, topology, continuous data). Data sources. Analyzing the sensor data attribute values. Validation and verification of the spatial-temporal data quality. Database design. Digital map creation based on the database structure. Data mining techniques for analyzing spatial-temporal data. Post-processing of spatial-temporal sensor data. Applying techniques for defined system model visualization, geo-spatial sensor data analysis, DEM (Digital Elevation Model) processing algorithms, etc.								
12.	l eaching 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 $h = 22$	25 h						
14.	Available hours distribution		45+30+150 = 225						
15.	Teaching activities		Theoretical classes	45 h					
			Practical classes (labs, exercises), seminars, team work	30 h					
16.		6.1.	Project tasks	50 h					
	Other activities		Self study	50 h					
			Homework	50 h					
	Grading								
17.	17.1. Tests	40 points							
	17.2. Seminar work/ project (presentat	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)			
Conditions for attending the final exam			Successful completion of activities 15.1 and 15.2					
Language				Macedonian or English				
Quality assessment			Internal evaluation and student pools					
Literature								
22.1.	Compulsory							
	No.	Author	Title		Publisher	Year		
	1. Harmon J., Anderson S. C		The design and implementation of Geographic Information Systems	John Wiley & Sons	2003			
	2.		Ad	lvanced Spatial Analysis	ESRI Press	2008		
	3.	Maguire D., Batty M., Goodchild M.	G	IS Spatial Analysis and Modeling	ESRI Press	2005		
22.2.	Additional							
	No.	Author		Title	Publisher	Year		
	1.							
	2.							
	3.							
	Conditi Langua Quality Literatu 22.1.	Conditions f Language Quality asse Literature 22.1. 1. 2. 3. Add No. 22.2. 1. 2. 3. 3.	Conditions for attending the final exar Language Quality assessment Literature Compulsory No. Author 22.1. 1. Harmon J., Anderson S. 2. 3. Maguire D., Batty M., Goodchild M. Additional No. Author 22.2. 1. 3. June 2000 June	Conditions for attending the final exam   Language   Quality assessment   Literature   Compulsory   No. Author   22.1. 1.   Harmon J., Anderson S. C   2. Ac   3. Maguire D., Batty M., G   Goodchild M. G   22.2.1. 1.   2. Ac   3. January (State Content on the second on the s	from 69 to 76 points   from 77 to 84 points   from 93 to 100 points   Conditions for attending the final exam Successful completion   Language Macedoni   Quality assessment Internal evaluatio   Literature Internal evaluatio   22.1. 1.   Harmon J., Anderson S. The design and implementation of Geographic Information Systems   2. Advanced Spatial Analysis   3. Maguire D., Batty M., GIS Spatial Analysis and Modeling   Additional No. Author   22.2. 1.   1. 1.	from 69 to 76 points 7 (seven) (D   from 77 to 84 points 8 (eight) (C)   from 93 to 100 points 10 (ten) (A)   Conditions for attending the final exam Successful completion of activities 15.1 ar   Language Macedonian or English   Quality assessment Internal evaluation and student pools   Literature Compulsory   No. Author Title   Publisher John Wiley &   22.1. 1. Harmon J., Anderson S.   Corgraphic Information Systems Sons   22.1. 2. Advanced Spatial Analysis   Additional Moclauthor Title   Publisher 1. ESRI Press   3. Maguire D., Batty M., GIS Spatial Analysis and Modeling ESRI Press   Additional 1. 2.   3. Additional Modeling		