

1.	Course	<b>Algebraic structures for computer science</b>				
2.	Code	<b>INF-S1</b>				
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 Marija Mihova, Prof. D-r Zaneta Popeska,				
9.	Prerequisites	None				
10.	. Course programme goals (competences): The goal of the course is to introduce to students the algebraic structures that will be used in the other courses of this Phd Program					
11.	Course syllabus: . Studying the structure and the properties of groupoids> semigroups groups and quasigroups, rings, fields, Boolean algebras and relational algebras. The special accent will be on finite algebraic structures of previous types, that are important considering their applications. Parts of geometric algebra and application to 3D programming, graphics, robotics and other.					
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 ECTS 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	40 h		
16.	Other activities	16.1.	Project tasks	30 h		
		16.2.	Self study	30 h		
		16.3.	Homework	80 h		
17.	Grading					
	17.1.	Tests			60 points	
	17.2.	Seminar work/ project (presentation: written and oral)			40 points	
	17.3.	Active participation			0 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.	A. Clark	Elements of Abstract algebra	Dover Publ. Inc., New York	1984
	2.	P. Feinsilver, René Schott	Algebraic Structures and Operator Calculus	Springer	1994
	3.	L. Dorst, D. Fontinje, S. Mann	Geometric Algebra for computer science	Morgan Kaufman, Elsevier	2007
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22.2.	No.				
	1.	Ѓ. Чупона	Алгебарски структури и реални броеви	Просветн о дело, Скопје	1980