1.	Course title	**Formal languages and automata**			
2.	Course code	CSEW317			
3.	Study program	**KNI, IKI, ASI**			
4.	Unit offering the course	**FCSE**			
5.	Undergraduate/postgraduate/PhD	**Undergraduate**			
6.	Year/semester 2/ winter	7. ECTS: **6**			
8.	Teacher(s)	Academic prof. dr. Ljupco Kocarev, prof. dr. Marija Mihova, assoc. prof. dr. Igor Trajkovski, assoc. prof. dr. Boro Jakimovski			
9.	Course prerequisites	none			
10.	Goals (competences): Being competent to use formal models of computability as a basis for the theory and practice of program languages and compilers. To be competent to follow a higher course of theory of computation. Introduction to languages, regular and context-free languages, finite automata and push down automata, grammars and relationship between certain types of automata and languages.				
11.	Course content: Introduction to formal languages and automata. Finite automata. Regular expressions and regular languages. Properties of regular languages. Context free grammars and languages. Push-down automata. Properties of context free languages. Turing machines. Undecidability. P, NP and other classes of problems;				
12.	Teaching methods: Lectures, theoretical exercises, laboratory exercises, project work, homework.				
13.	Total available time	6 ECTS x 30 hours = 180 hours			
14.	Distribution of the available time	30 + 45 + 30 + 35 + 40 = 180 hours			
15.	Teaching activities	15.1.	Lectures	30 hours	
		15.2.	Training (labs, problem solving), seminar and team work	45 hours	
16.	Other activities	16.1.	Project work	30 hours	
		16.2.	Self study	35 hours	
		16.3.	Home work	40 hours	
17.	Grading				
	17.1.	Tests		80 points	
	17.2.	Seminar work/project (written or oral presentation)		20 points	
	17.3.	Active participation		0 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	Completed activities 15 and 16	
20.	Course language	Macedonian and English	
21.	Quality assurance methods	Internal evaluation and satisfaction polls	

22.

Literature

22.1. Compulsory

No.	Authors	Title	Publisher	Year
1.	John E. Hopcroft, Rajeev Motwani, Jeffrey D. Ullman	Introduction to Automata Theory, Languages, and Computation	Addison-Wesley	2006
2.	Б. Јанева	Алгоритми и автомати	ПМФ, Скопје	1999
3.	Elaine Rich	Automata, Computability and Complexity Theory and applications	Pearson Education, Inc .	2008

22.2. Mandatory

No.	Authors	Title	Publisher	Year
1.	Michael Sipser	Introduction on the theory of computation	PWS Pub. Co.	1996