

1.	Course Title	Formal languages and automata
2.	Code	F18L3S039
3.	Study program	Software engineering and information systems
4.	Study Program Organizer	Faculty of Computer Science and Engineering
5.	Degree (first, second, third cycle)	first cycle
6.	Academic year / semester 3 / summer / optional	7. ECTS credits 6
8.	Teacher	associate professor Marija Mihova
9.	Course enrollment prerequisites	Структурно програмирање
10.	<p>Course program goals (competencies):</p> <p>The purpose of this course is to acquaint the student with an overview of the theoretical foundations of computer science from the perspective of formal languages. - Classify machines by their power to recognize languages. - Employ finite state machines to solve problems in computing. - Explain deterministic and non-deterministic machines. - Comprehend the hierarchy of problems arising in the computer sciences.</p>	
11.	<p>Course program content:</p> <p>Introduction to automata and formal languages; Finite automata; Regular expressions and languages; Properties of regular languages; Context free grammars and languages; Push-down automata; Properties of context free languages; Turing machines; decidability; P, NP and other complexity classes;</p>	
12.	<p>Learning methods:</p> <p>Lectures using presentations, interactive lectures, exercises (using equipment and software packages), teamwork, case studies, invited guest lecturers, independent preparation and defense of a project assignment and seminar work.</p>	
13.	Total available time	6 ECTS x 30 hours = 180 hours
14.	Distribution of the available time	30 + 45 + 15 + 15 + 75 = 180 hours

15.	Teaching activity forms	15.1.	Lectures – theoretical teaching	30 hours
		15.2.	Exercises (laboratory, auditory), seminar papers, teamwork	45 hours
16.	Other activity forms	16.1.	Project Tasks	15 hours
		16.2.	Independent Learning Tasks	15 hours
		16.3.	Home learning	75 hours
17.	Assessment methodology			
	17.1.	Tests		0 points
	17.2.	Seminar paper/project (presentation: written and oral)		10 points
	17.3.	Activity and learning		0 points
	17.4.	Final exam		90 points
18.	Assessment criteria (points/grade)	up to 50 points		5 (five) (F)
		51 to 60 points		6 (six) (E)
		61 to 70 points		7 (seven) (D)
		71 to 80 points		8 (eight) (C)
		81 to 90 points		9 (nine) (B)
		91 to 100 points		10 (ten) (A)
19.	Course completion and final exam requirements	Realized activities 15.1 and 15.2		
20.	Teaching Language	Macedonian and English		
21.	Teaching quality evaluation method	Internal evaluation mechanisms and questionnaires		
22.	Course Material			
	22.1.	Mandatory course material		

No	Author	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.	Additional course material			
No.	Author	Title	Publisher	Year