

1.	Course title	Compilers		
2.	Course code	CSES615		
3.	Study program	KNI, ASI		
4.	Unit offering the course	FCSE		
5.	Undergraduate/postgraduate/PhD	Undergraduate		
6.	Year/semester 3/ summer/elective	7. ECTS: 6		
8.	Teacher(s)	assoc.prof. Marija Mihova, assoc.prof. Dimitar Trajanov, assis. prof. Sonja Filiposka, assis. prof. Igor Mishkovski		
9.	Course prerequisites	Algorithms and data structures		
10.	Goals (competences): To understand the process of compiler construction that will upgrade students to developers entering the fundamental nature of programming languages. The students should be able to write a compiler.			
11.	Course content: History of programming languages. Studying compiler structure by learning the structure of a given programming language. Language specification. Development of grammar and syntax oriented interpreters. Lexical analysis. Syntax and Semantics, syntax trees. Parsing: bottom-up and top-down. Preprocessor. Error Recovery. Semantics: Symbol table, Type checking, Miscellaneous semantic checks. Code generation. Code optimization. Bootstrapping. Using some object-oriented programming language, the students will construct a compiler for some programming language..			
12.	Teaching methods: Lectures supported by slide presentations, interactive lectures, trainings (using lab equipment and software packages), team work, case studies, invited guests and lectures, individual practical assignments presentations, seminar paper, e-learning (forums, consultations).			
13.	Total available time	6 ECTS x 30 hours = 180 hours		
14.	Distribution of the available time	30 + 45 + 40 + 30 + 35 = 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	40 hours
		16.2.	Self study	30 hours
		16.3.	Home work	35 hours
17.	Grading			
	17.1.	Tests	45 points	
	17.2.	Seminar work/project (written or oral presentation)	50 points	
	17.3.	Active participation	5 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 student polls		
22.	Literature			
	Compulsory			
	No.	Authors	Title	Publisher Year
	22.1. 1.	AlfredAho, MonicaS. Lam, RaviSethi, JeffreyD. Ullman	Compilers-Principles, Techniques and tools	Pearson Education, Inc 2007
	2.	F.J.F. Benders; J.W. Haaring;T.H. Janssen; D. Meert; A.C. vanOostenrijk	Compiler ConstructionA Practical Approach	2003
	Additional			
22.2.	No.	Authors	Title	Publisher Year
1.	Niklaus Wirth	Compiler Construction	Addison-Wesley 1996	