

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Computing and Informatics		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Compilers		
Lecturer (for lectures)		Stojković R. Suzana, Rajković J. Petar		
Lecturer/associate (for exercises)		Marković M. Ivica, Petrović N. Nenad		
Lecturer/associate (for OFE)		Marković M. Ivica, Petrović N. Nenad		
Number of ECTS	5	Course status (obligatory/elective)	Obligatory	
Prerequisites				
Course objectives				
The objectives of this course are to educate the students in th different phases of a compiler: lexical analysis, syntax and semantic analysis, interidiate code generation, optimization techniques and output code generation. Enable them to utilize compiler construction tools in the process of building a compiler				
Course outcomes				
By the end of the course, students will: gain an understanding of how compilers translate source code to machine executable., utilize tools to automate compiler construction, have the knowledge to design, implement, and test a compiler for a simple language.				
Course outline				
Theoretical teaching				
Formal languages and gramars. Lexical analsis. Top-down and bottom-up parsing algorithms. LL(k) grammars. Operator precedence grammars and precedence grammars. LR grammars. Semanic analysis and atribute grammars. Intermediate codes. Machine dependent and machine independent code optimization. Code generation. Runtime memory management.				
Practical teaching (exercises, OFE, study and research)				
Final automata and regular expressions. Lexical analysis. jflex - scanner genrator. Top-down parsing algorithms. LL(1) rpammars. Bottom-up parsig algorithms. LR grammars. CUP - parser generator. Symbol tables. Attributes of the symbols in cup specification. Intermediate code generation. Code generation for procedure calling.				
Textbooks/references				
1	M. Stankovic, S. Stojkovic, Z. Tosic: Compilers, Faculty of electronic engineering, Nis, 2018. (in Serbian)			
2	A. V. Aho, M. S. Lam, R. Sethi, J. D. Ullman: Compilers, Principles, Techniques, and Tool, Addison-Wesley, 2-nd edition 2006.			
3	ppt presentations from lectures			
4				
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	2	1	0	0
Teaching methods				
Lectures, auditive excercises, lab practicing				
Grade (maximum number of points 100)				
Pre-exam duties		Points	Final exam	Points
Activity during lectures			Written exam	
Exercises		20	Oral exam	40
Colloquia		40		
Projects				