



Engineering studies in IT - międzynarodowy program studiów
prowadzonych przez Wydział Matematyki i Informatyki UAM w Poznaniu
Nr projektu POWR.03.03.00-IP.08-00-MPK/16

Introduction to modern methods of compiler construction

Learning module description

GENERAL INFORMATION

1. Module title: Introduction to modern methods of compiler construction
2. Module code: DIMC LI0-E
3. Term: summer
4. Duration: 30h lectures + 30h laboratories
5. ECTS: 6
6. Module lecturer: Irakli Kardava
7. E-mail: irakal@amu.edu.pl; kardava@sou.edu.ge
8. Language: English

DETAILED INFORMATION

1. After studying this course, the student will be ascertained with formal language and grammar theory. They can compose the formal grammar (morphological analyzer and synthesizer) for any text (natural or specific language). They will study the concept of finite automata and be able to implement them in practice. They will be able to convert the compiled formal grammar into different programming languages and by modifying the obtained file create a semantic functions corresponding to the given syntax. In addition, the student will be able to create their own (simple) parsers and programming languages.
2. Pre-requisites: the knowledge of main concepts of C languages and Object Oriented Programming techniques.

SYLLABUS:

Week 1: General overview of compilers;
Week 2: Definition of Formal Language and Grammar;
Week 3-4: Definition the concept of syntax and semantics (analyzer and synthesizer);
Week 5: Description, download and install GoldParser Builder. Interface introduction;
Week 6-7: Formal Grammar syntax;
Week 8: Creation Formal Grammar for a simple language and run it with GoldParser Builder;
Week 9-10: Translation Formal Grammar into programming language and embed it into a project.
Week 11: Composition of semantic functions;
Week 12-13: Regular expression as the class RegEx;
Week 14-15: Creation of executable compilers based on constructed Formal Grammars.