Level: bachelor	
Course title: Compiler construction 1 (code I372)	
Status: obligatory for the *Computer Science* module, elective for the *Information Technologies* module	
ECTS: 7	
Requirements: Object-oriented programming 1 (I032)	

Learning objectives

Training students to design and create a compiler for a procedural or object-oriented programming language.

Learning outcomes

Minimum: Students should be able to write a compiler for a subset of a procedural programming language based on the specifications provided.

Optimal: Students should be able to develop software for the transformation of input text to output text, according to the given specifications.

Syllabus

Theoretical instruction

Description of programming languages. Syntax diagrams. Backus normal form. Context-free grammars. LL, LR and related grammars.

Compiler generators. The working principle of compilers. Attribute grammars. An example of a compiler generator.

Practical instruction

Examples of compilers for a subset of a procedural or object-oriented programming language. The main parts of a compiler. Management of the symbol table. The basic elements of lexical analysis. Syntax analysis – method of recursive descent. Semantic analysis of compliance types. Abstract machine. Code generation. Optimization of code.

Weekly teaching load				Other:
Lectures: 2	Exercises: 3	Other forms of teaching:	Student research:	