Department: Mathematics and Computer Sciences
Division: Applied Mathematics
Level and Major: Undergraduate

Course Title: Compiler
Number of Credits: 3
Prerequisite: Foundation of Computability Theory
Lecturer:

Course Description: Introduction to the theory and application of compiler

Course Goals and Objectives: The student is familiar with the principles of creating a compiler and works with its concepts.

Course Topics:

- Introduction to compiler
- Lexical Analysis
- Finite automata
- Top-down Parsing
- Bottom-up Parsing
- Semantic Analysis
- Code Generation
- Local Optimization
- Global Optimization

Reading Resources:

- Alfred V. Aho, Monica S. Lam, Ravi Sethi, and Jeffrey D. Ullman, Compilers: Principles, Techniques, and Tools, 2nd Edition, Pearson, 2007.
- Douglas Thain, Introduction to Compilers and Language Design, 2nd Edition, 2020, downloadable from http://compilerbook.org.
- Keith D. Cooper, and Linda Torczon, Engineering a Compiler, 2nd Edition, Elsevier, 2012.

Evaluation: