CSE 401 Introduction to Compiler Construction

Credits
4.0 (3 hrs lecture, 1 hr section)

Lead Instructor
Dan Grossman

Textbook
- *Engineering a Compiler*, Cooper & Torczon

Course Description
Fundamentals of compilers and interpreters; symbol tables; lexical analysis, syntax analysis, semantic analysis, code generation, and optimizations for general purpose programming languages. No credit to students who have taken CSE 413.

Prerequisites
either CSE 326 and CSE 378 or CSE 332 and CSE 351.

CE Major Status
Selected Elective

Course Objectives
Learn principles and practice of language implementations. Understand tradeoffs between run-time and compile-time processing. Understand tradeoffs between language features, run-time efficiency, and implementation difficulty. Gain experience working with large systems software, object-oriented design, and Java.

ABET Outcomes
(a) an ability to apply knowledge of mathematics, science, and engineering
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
(e) an ability to identify, formulate, and solve engineering problems
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Course Topics
- Organization of Compilers and Interpreters
- Lexical Analysis
- Syntactic Analysis
- Semantic Analysis
- Interpretation
- Run-Time Storage Layout
- Code Generation
- Optimization