

**1. Course number and name**

CptS 452: Compiler Design

**2. Credits and contact hours**

3 credits, 3 lecture hours

**3. Instructor's or course coordinator's name**

Ananth Kalyanaraman

**4. Textbook, title, author, and year**

Alfred V. Aho, Monica S. Lam, Ravi Sethi, and Jeffrey D. Ullman. 2007. *Compilers: Principles, Techniques, & Tools* (2nd ed.). Prentice Hall.

**5. Specific course information**

- a. *Catalog description:* Design of lexical analyzers, syntactic analyzers, intermediate code generators, code optimizers and object code generators.
- b. *Prerequisites or corequisites:* CPT S 317 with a C or better; CPT S 355 with a C or better; certified major in Computer Science, Computer Engineering, or Electrical Engineering. Prerequisite Grade Requirements: C or better

**6. Specific goals for the course**

This course develops students' understanding of compilers and the phases of the compilation process. Based on the materials covered in lectures, students implement a compiler for a simple imperative language. (1, 2, 6, 7)

**7. Brief list of topics to be covered**

- Overview of compilers and interpreters
- Lexical analysis
- Syntax analysis
- Syntax-directed translation
- Run-time environments
- Code generation
- Optimization