

CSc 335 Programming Language Paradigms
Spring Semester 2015
Professor Troeger

Catalog Description Aspects of the design and implementation of functional, imperative and object-oriented programming languages, presented via a sequence of interpreters. Topics may include abstraction, parameter passing, type checking, inheritance, and continuations. Substantial programming assignments.

Course Goals (i) introduce Scheme - a wide-spectrum language supporting functional programming; (ii) introduce basic ideas for proving correctness of functional programs; (iii) impart a working knowledge of some of the essential concepts of programming languages, forming a basis for understanding future developments.

Required Texts; Abelson and Sussman: [The Structure and Interpretation of Computer Programs](#); Friedman and Felleisen: [The Little Schemer](#);

Note that [The Structure and Interpretation of Computer Programs](#) is available for free, on line, from the MIT Press.

Required Software Please download and install Scheme, as per instructions on the handout [Getting Started in CSc 335](#).

Prerequisites (i) discrete mathematics and data structures; (ii) algorithms; (iii) experience constructing programs of some size. That is, CSc 104, 212, 220 and 221.

Major Topics Covered in the Course (i) introduction to Scheme and functional programming; (ii) interpreters as mechanisms for explaining the run-time behavior of languages. Roughly speaking, we will focus initially on programming in Scheme, and later in the course on interpreters.

Homework Programming problems and reading will be assigned regularly.

Grading There will be two hour exams (25% each), a final exam (35%) and a project (15%). Exams will be based on class discussion as well as on published materials.

Office Hours My hours this term will be 12:45 – 2:00 on Thursdays, and by appointment. My office is NAC 7/116. It will occasionally be necessary for me to shift my office hours to Tuesdays, at the same time: the shifts will be announced in advance.

Course Website Announcements and materials will be disseminated via Piazza. Should you need to contact me otherwise, I can be reached at dtroeger@cs.ccny.cuny.edu