Modern Compiler Design and Implementation
CAS CS 391X1 Summer 2025

(Syllabus)

- **Semester** Summer I, 2025

- **Teaching Staff**

  - Instructor – Hongwei Xi
    * Office Hours: TBA
    * Location: CDS 727, e-mail: `hwxi@cs.bu.edu`

- **Lecture Times**: MTW 1:00-3:30PM

- **Classroom**: CDS 263

- **Reference Book**:

  - Modern Compiler Implementation in ML by Andrew W. Appel. ISBN 0-521- 58274-1. Cambridge University Press.

- **Homepage**: `https://hwxi.github.io/TEACHING/CS391/2025Sum1`

- **Description**: Modern Compiler Construction in Python is a course that introduces students to some basics in the design and implementation of compilers. In this course, we teach the theory behind various components of a compiler as well as the programming techniques involved to put the theory into practice. In particular, we adopt a style of modern compiler construction that builds a compiler by stringing a sequence of translations sharing a common closure-based interpreter-like structure. The chosen programming language for implementation is Python 3. However, you can seek the instructor's approval to choose a functional programming language as your implementation language if you so wish.

- **Prerequisites**: This course is designed for students who already have an immediate level of proficiency in Python. You are expected to be familiar with a text editor (e.g., vim, emacs, vscode).

- **Exams**:

  - First midterm exam: TBA
  - Second midterm exam: TBA
  - The final exam date is yet to be anounced.

- **Grades** The final score is calculated using the following formula.

$$\text{final score} = 30\%\cdot(\text{homework}) + 20\%\cdot(\text{midterm}) + 40\%\cdot(\text{final}) + 10\%\cdot(\text{participation})$$

The final letter grade is calculated as follows.

- **A**: final score is 80% or above

- **B**: final score is 70% or above

- **C**: final score is 60% or above

- **D**: final score is 50% or above

- **Program Submission**: Programming assignments are to be submitted via the Gradescope system.

- **Attendance**: It is expected that you will attend the lectures.

- **Academic Integrity**: We adhere strictly to the standard BU guidelines for academic integrity. For this course, it is perfectly acceptable for you to discuss the general concepts and principles behind an assignment with other students. However, it is not proper, without prior authorization of the instructor, to arrive at collective solutions. In such a case, each student is expected to develop, write up and hand in an individual solution and, in doing so, gain a sufficient understanding of the problem so as to be able to explain it adequately to the instructor. Under *no* circumstances should a student copy, partly or wholly, the completed solution of another student. If one makes substantial use of certain code that is not written by oneself, then the person must explicitly mention the source of the involved code.