Syllabus

Introduction to Programming Languages and Compilers

Instructor: Drew Davidson, davidson@cs.wisc.edu
Teaching Assistant: Dillon Skeehn, dskeehan@cs.wisc.edu

Course Content & Materials

Class website: `http://pages.cs.wisc.edu/~cs536-1`
Piazza (Q&A): `http://piazza.com/wisc/firstsemester2014/cs536`
Book: None required

Prerequisites

This class requires skill in programming *and* formal PL techniques. You should be comfortable with Java and have some familiarity with C and assembly code. If you've taken CS 536 (Intro to Data Structures) and either ECE 354 (Digital System Fundamentals) or CS 552 (Intro to Computer Architecture), you can expect to be prepared for this course.

Communication Policy

Email: Allow the instructor 24 hours to respond to emails. Students are expected to read course emails within 24 hours. Note that course emails will be sent to `@wisc.edu` email accounts (not `@cs.wisc.edu` accounts).
Piazza: This course uses Piazza for interaction. Students are expected to join the course Piazza group. Students may not post code for assignments on Piazza. Anonymous posting will be allowed, but may be disabled at the instructor's discretion.
Office Hours: Office hours are posted on the course website homepage. Walk-in office hours are subject to cancellation. Students may set up appointments times for office hours, and expected to do so if the listed times present conflicts.

Course Accounts

Each student registered for the course has an account on the CS instructional machines. The instructional Linux machines are located on the first floor of the Computer Sciences building. If you choose to work on your own machine, you will need to configure extra tools (make, Java Cup, and Spim). Note that you are responsible for copying your code to the class handin directory for grading and ensuring your code runs on the CS Linux machines.

Coursework

Grades

Grades are weighted as follows:

- Exams (40%)
  - Midterm: tentatively 10/23 @ 2:30 in class
  - Final: 12/18 @ 10:05 (room TBA)
- Programming Assignments (40%)
  - Program 1 is 5%, Programs 2 - 6 are each 7%
  - All programs must be written in Java!
- Homework assignments (20%)
  - About 10 assignments, equally weighted

Letter grades will be assigned according to the table at right. Individual assignments and overall course grades may be curved at the instructor's discretion. Curves are guaranteed to never lower a student's letter grade (but may raise it).

Percent Range	Letter grade
$\geq$92	A
88 - 91	AB
82 - 87	B
78 - 81	BC
68 - 77	C
60 - 67	D
$\leq$59	F

Late Policy

Homework assignments are not accepted late.
Programming assignments are accepted up to 72 hours late with penalties that depend on how late an assignment was submitted and how many free late days you have left. See the Assignments page of the course website for complete details.

Collaboration Policy

The first program, and *all* homeworks must be done individually. Computer Sciences and Computer Engineering graduate students will work alone on the remaining programming assignments; others may choose to work alone or in pairs with another student in the course.

Using someone else's work or allowing someone else to have access to your work in violation of the collaboration policy is academic misconduct and will be dealt with in accordance with University Academic Misconduct procedures. If you are not sure if something violates the collaboration policy, please ask the instructor. Ignorance of what constitutes a violation of the policy is not a defense; it is your responsibility to be sure.

Course Topics

The following is a tentative schedule of the topics to be covered:

Topic	# Lectures
Structural Overview	1
Finite state machines	2
regular expressions	1
Scanning, JLex	2
Context-Free Grammars	2
Parsing	2
Syntax-directed translation	2
Java Cup	1
Symbol tables	1
Type checking	2
Runtime environments	2
Locals and globals	1
Parameters	1
Intermediate code generation	3
Machine code generation	2
Optimization	2

Resources

Linux Training

If you are a new Linux user (or new to the CS Linux facilities), you may wish to attend the "Introduction to Linux and the CSL Labs" session hosted by WACM. Check `http://research.cs.wisc.edu/wacm/`

Additional Books

Although no books are required for the course, those who want an additional reference may appreciate:

- Aho, Alfred V. *Compilers: Principles, Techniques and Tools, 2/e.* Pearson Education India, 2003.

Disability Accomodations

If you are a person with special circumstances that you believe will affect your class performance (for example, sensory or learning disabilities, anxiety, or language differences), please let the instructor know as soon as possible so that we may work together to develop strategies to meet your needs.

The McBurney Disability Resource Center (263-2741) provides resources to students with disabilities . They will assess your needs and can provide a VISA detailing special accomodations. Please provide this VISA to the instructor before the start of the third week of classes or as soon as a VISA is available.