CPS296.2 Compiler Construction
Fall 2011
Dr. Andrew (Drew) Hilton

Textbook

Required. "Modern Compiler Implementation in ML." by Andrew Appel.

- Be sure to get "in ML" (blue) version.

- Errata: `http://www.cs.princeton.edu/~appel/modern/ml/`

   Optional. "ML for the Working Programmer." by L.C. Paulson

Assignments and Grading

Your grade for this course will be comprised of three components:

- Course Project: 35%

- Midterm Exam: 30%

- Final Exam: 35%

Course Project

Over the course of the semsester, you will write a compiler start to finish. Important information about the project:

Deadline Your compiler is due December 9th, 2011 at 11:59 PM. Any extensions to this deadline require significant extenuating circumstances.

Partners You will work in pairs, or groups of 3.

Phases The compiler will be broken down into individual phases. Each phase of the compiler will be assigned as we cover the relevant course material. These phases will be:

Phase	Points	Due Date
Lexical Analysis	10	9/19
Parsing	15	10/5
Semantic Analysis	20	10/31
Frame Analysis and Intermediate Representation	15	11/14
Instruction Selection	15	11/21
Register Allocation	15	12/5
Working compiler, produces assembly	10	12/9

"Due dates"/Feedback Each phase of the compiler will have a "due date." If you submit your phase on time, the TAs will give you feedback on it, including your score on that particular portion. This score is what you will receive for that phsae of the compiler if you leave it unchanged by the end of the semester. If you are unhappy with your score on a particular

phase, you are encouraged to improve that phase. If you improve a phase in your final submission **please inform your TA** so they can be sure to re-examine that phase. You are **strongly** encouraged to submit each phase by its due date. However, no explicit penalties will be imposed for failing to do so.

Warning Writing a compiler is a large, complex project. The above policiy is designed to give you some flexibility in your working schedule. Do not wait until Thanksgiving, and try to write your entire compiler in one weekend.

Programming Language You will write your compiler in SML-NJ. You may not be familiar with SML-NJ, but it is an excellent language for writing compilers. There will be an un-graded/optional "SML warmup" assignment at the start of the semester.

Exams

You will have one mid-term exam (in class, Monday October 13th), and one final exam (during the scheduled final exam time slot). These exams will be individual effort. You may bring one page (8.5x11) of notes to use during the exam. This page may be hand-written, typed, or a combination of each; however, it must be produced by you. The exams will be closed book.

Cheating Policy

Your work is expected to be your own (exams) or your group's (projects). If you commit academic misconduct in this course and are caught, you will receive a grade of minus 100% (less than a zero—cheating is worse than not doing the assignment) on the relevant assignment. You will then be refered to the Office of Student Conduct for further disciplinary as appropriate.

If you are unsure whether a certain course of action is permissible or not, please ask. If you think that asking is a bad idea because I would probably say "no," you can be fairly certain it is not permissible.