General Information
Class meetings: TTh 5:00-6:15pm in ENG 003

Professor: Jay Ligatti (ligatti@cse.usf.edu)
Office hours: MWF 5-6pm, and other times by appointment, in ENB 333

Teaching Assistant: Donald Ray (dray3@cse.usf.edu)
Office hours: M 4-5pm and F 4-5pm, in ENB 327
Duties: Grade and answer questions about programming assignments

Required Textbook: *Elements of ML Programming (ML97 edition)*, by J. Ullman, 1998

Recommended Textbook: *Types in Programming Languages*, by Benjamin Pierce, 2002
(available online: http://www.netlibrary.com/urlapi.asp?action=summary&v=1&bookid=70966)

Announcements: Please check the course website (http://www.cse.usf.edu/~ligatti/pl-14) regularly for announcements, assignments, and an up-to-date schedule. Grades will be posted on Canvas (http://my.usf.edu/). I may also send announcements via Canvas, so please ensure that your current email address is stored there.

Course Objectives: Students having successfully completed this course will understand the basic techniques of specifying, designing, and analyzing programming languages. Topics include syntax, operational semantics, type systems, type safety, lambda calculus, functional programming, polymorphism, and side effects.

Tentative **Schedule**

Week	Dates	Topics	Reading (in ML book)
1	08/26, 08/28	Introduction; ML basics; Polymorphism	1-3.1, 5.3
2	09/02, 09/04	ML functions; I/O; Higher-order functions	3.2-3.6.3, 4.1, 5.1
3	09/09, 09/11	Currying; ML type system	5.4-5.6, 6.1-6.3
4	09/16, 09/18	Deductive systems	Class notes
5	09/23, 09/25	Syntax; Review	Class notes
6	09/30, 10/02	Test I; Dynamic semantics	Class notes
7	10/07, 10/09	Dynamic semantics; λ-calculi	Class notes
8	10/14, 10/16	λ-calculi; Static semantics	Class notes
9	10/21, 10/23	Type systems; Type safety	Class notes
10	10/28, 10/30	Type safety; Review	Class notes
11	11/04, 11/06	Test II; Aggregate data types	Class notes
12	11/13	Recursive types	Class notes
13	11/18, 11/20	Side effects; References; Loops	5.2, 7.2-7.3
14	11/25	Control-flow effects; Evaluation contexts	Class notes
15	12/02, 12/04	Control-flow effects; Review	Class notes
Final	12/09 (Tuesday), 3-5pm		All tests are cumulative

Grading and Attendance

Tests: There will be three tests (09/30, 11/04, and 12/09). Tests are closed notes, books, laptops, phones, friends, neighbors, associates, contemporaries, etc. Graduate students will be asked to solve additional test problems beyond what is asked of undergraduates.

Assignments: There will be 5 functional-programming assignments, due in Canvas by 11:59pm on the following dates: 09/07, 09/21, 10/12, 10/26, and 11/30. There will also be 4 theory assignments (formal definitions/proofs), due in hardcopy by the beginning of class (5:00pm) on the following dates: 09/23, 10/14, 10/28, and 12/02.

Final-grade breakdown: 24% Programming assignments   (5% each, except 4% for #2)
                                        18% Theory assignments   (4% each, except 6% for last one)
                                        58% Tests   (first test worth 17%, second 17%, third 24%)
                                        100% Total

Late assignments: Programming assignments may be submitted up to 3 days late, with a 10% penalty for each day late (e.g., submitting a 90% correct solution 2 days late earns a 70%). Theory assignments are always due at 5pm on Tuesdays; you may submit theory solutions up to 1 class late (i.e., by 5pm on the following Thursday) with a 15% penalty.

Extra credit: Additionally, you may complete independent projects for extra credit. Independent projects must be original and pre-approved; please talk to me if you're interested. After pre-approval, you'll need to meet with me to (1) demonstrate and/or describe the results and (2) turn in a paper describing your work.

Attendance: I don't take attendance in class, but absences put you at risk for missing assignments, schedule updates, and material not covered in the textbook. Students who will miss class for religious reasons must notify me of the date(s) in writing by 08/29/14. Finally, please do not sell notes from or record class lectures without my permission.

Grading system: For final letter grades, I'll use the standard scale of A (100-90), B (89-80), C (79-70), D (69-60), and F (59-0). I'll also use pluses and minuses on final grades to indicate either a borderline grade (i.e., within 2.5 points of an adjacent grade) or exceptionally outstanding work (A+). Although I may curve test/assignment scores up, with graduate and undergraduate sections curved separately, please do not expect a curve.

Academic honesty: Everything you turn in for this class must be your own work. On all work that you submit, I'll ask you to write and sign a pledge promising that you have not cheated. If you are caught cheating, you will receive an FF grade for the class.

Of course, every part of this syllabus is subject to adjustment as the semester progresses. Please contact me as soon as possible if you are dissatisfied with the course policies, discussions, assignments, grading, etc.; I will be happy to accommodate reasonable requests for modifications.