CS 5314 Programming Languages Spring 2000

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Office: 610 McBryde Hall
Office Hours: 2-3:30 TTH & By Appt

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Textbook: Required: Sebesta, Concepts of Programming Languages (4th Ed)
Reference: Friedman and Felleisen, The Little Lisper
Clocksin and Mellish, Programming in Prologue

Course Goals
This course provides an in-depth study of current and historical issues in the design, implementation, and application of programming languages. Topics will vary from basic to advanced in areas such as syntax, semantics, binding, data abstraction, exception handling, concurrency, and functional, logic and object-oriented programming. A modest amount of programming will be required to help you get the feel for different types of languages. Sebesta provides the background information, but readings from current literature will also be required. Each student will be required to give an individual and group presentation and to participate in the discussion during other presentations.

Prerequisites
Minimally: an undergraduate course in the concepts of programming language, e.g. CS3304. If you do not meet this prerequisite, I will consider background experience that represents a working knowledge of multiple languages including one outside the procedural/imperative domain.

Grading
Grading will look something like this:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Language Concept Presentation</td>
<td>15%</td>
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<tr>
<td>PLDI Paper Presentation</td>
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<tr>
<td>Programs</td>
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<td>Midterm</td>
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<td>Final</td>
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<td>Pop Quizzes &amp; Homework</td>
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Comments
There is a lot of very interesting material in this course, including many current research topics. I hope that you enjoy it!
Tentative Syllabus

Week 1: Chapters 4 & 5
Week 2: Chapters 6 & 7
Week 3: Subprograms: Concepts & Implementation (Chapters 8 and 9)
Week 4: Abstract Data Types & Concurrency Control (Chapters 10 & 11)
Week 5: Functional Programming Languages (Chapter 13)
Week 6: Logic Programming Languages (Chapter 14)
Week 7: Concurrency Control / Exception Handling (Chapters 11 & 12)
Weeks 8 - 11: Language Concept Paper Presentations
               30 minutes per paper; 5 minutes for questions
               2/3 students per group
Weeks 12 - 14: PLDI Conference Paper Presentations
               60 minutes per paper; 10 minute for questions
               4/5 students per group
Week 15: Wrap-up