

# Computer Engineering 171

## Design and Implementation of Programming Languages

Winter 2014  
Mondays, Wednesdays, and Fridays  
10:30 am – 11:35 am

### Instructor

Instructor: Darren Atkinson  
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### Textbook

Ravi Sethi, *Programming Languages: Concepts and Constructs*, Addison Wesley, 2nd edition, 1996.

### Grading

Homework: 20% (1/31, 2/14, 2/28, 3/14)  
Midterm exams: 40% (1/29 and 2/26)  
Final exam: 40% (3/17)

### Overview

1. Common language concepts: expressions, grammars, syntax trees (2 lectures)
2. Imperative languages: Pascal, C (6 lectures)
3. Object-oriented languages: C++, Smalltalk, Java (6 lectures)
4. Functional languages: ML, Scheme, Lisp (6 lectures)
5. Logical languages: Prolog (6 lectures)

### Learning Outcomes

Students will ...

1. Write programs in several programming languages across different programming language paradigms (e.g., procedural, functional, logical, object-oriented).
2. Specify, infer, and use types in the type system of a programming language.
3. Compare and contrast control structures and mechanisms such as iteration and recursion across different programming languages.
4. Compare and contrast different parameter passing and evaluation strategies.
5. Explain and use different name-value binding (i.e., scoping) implementations.

## **Policies**

### **Classroom Policies**

Recording (a video or audio replication or photographic image recorded on devices including, but not limited to, audio recorders, video recorders, cell phones, smartphones, digital cameras, media players, computers, or other devices that record images or sound) of classroom lectures is prohibited unless advance written permission is obtained from the class instructor and any guest presenters. Students who require recording or other adaptations of lectures as a reasonable accommodation for a disability should contact the Office of Disability Resources in advance of the lecture in order to obtain permission for the recording.

Both sections of this course are rather full and although the two instructors will try to remain in sync, material may be covered in a slightly different order between the two sections. Thus, you should make every effort to attend the section for which you are registered. You must take the exams in the class period for which you are registered. There will be no exceptions to this policy.

### **Disability Accommodation Policy**

To request academic accommodations for a disability, students must be registered with Disabilities Resources located in Benson, room 216. If you would like to register with Disabilities Resources, please visit their office in Benson 216 or call (408) 554-4109. You will need to register and provide professional documentation of a disability prior to receiving academic accommodations.

### **Academic Integrity Policy**

The University is committed to academic excellence and integrity. Students are expected to do their own work and to cite any sources they use. A student who is guilty of a dishonest act in an examination, paper, or other work required for a course, or who assists others in such an act, may, at the discretion of the instructor, receive a grade of F for the course.

In addition, a student found guilty of a dishonest act may be subject to sanctions up to and including dismissal from the University as a result of the student judicial process as described in the *Community Handbook*.

A student who violates copyright laws, including those covering the copying of software programs, or who knowingly alters official academic records from this or any other institution is subject to similar disciplinary action.