

Computer Science 411
Section 1
(Class Nbr 71942)

Fall 2005

Compilers and Interpreters

Instructor

Craig A. Rich
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Office Hours: Mon, Wed 9:30–11:00; Tue, Fri 10:00–11:00
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Lecture Meetings

Time: Mon, Wed, Fri 11:45–12:50
Place: Bldg. 8, Room 345

Textbook

Rich, Craig A. *Compilers and Interpreters—CS 411 Lecture Notes*, Fall 2005 (Available at Bronco Copy 'n Mail in the University Union).

Web-based Materials

my home page: <http://www.csupomona.edu/~carich/>
CS 411 home page: <http://www.csupomona.edu/~carich/classes/cs411/>
Generic Interpreter: <http://www.csupomona.edu/~carich/gi/>
Intranet services: <http://www.csupomona.edu/intranet/services/>

Grading

Exams	66%
Midterm (Friday, October 28)	32%
Final (Friday, December 9, 11:30 a.m.–1:30 p.m.)	34%
Programming Project	20%
Phase 1	10%
Phase 2	10%
Homework and Quizzes	14%

A student's weighted average percentage is $(\sum w_i(s_i/m_i))/(\sum w_i)$, where w_i , s_i , m_i are the weight, student's score and maximum score on graded assignment i . Course grades are assigned according to this curve, with the median student usually earning a C+ grade. Graded assignments will be accepted without penalty at any time on or before their due date. Graded assignments that are submitted after their due date will have their score reduced by $10(n+1)\%$, where n is the number of school days properly between the due date and the date submitted.

The course will cover most of the topics in sections 2.6–3.21 of the lecture notes, including the following:

- Context-Free Grammars and Languages
- Syntax Analysis
- First and Follow Sets
- Top-Down Syntax Analysis
- Bottom-Up Syntax Analysis
- Semantic Specifications
- Syntax-Directed Semantics
- Top-Down Semantic Analysis
- Bottom-Up Semantic Analysis

Programming Project

Through the quarter, project groups will develop and implement syntax-directed interpreters for the programming language Python that perform lexical, syntax, and semantic analysis. We will study examples of top-down and bottom-up interpreters. The project will be divided into two phases. Phase 1 will consist of lexical and syntax analysis for the complete Python language, and Phase 2 will consist of semantic analysis for a part of the Python language. The programming projects must be written in Java, and computer accounts on the Cal Poly Pomona Intranet have been provided.

Homework

Homework assignments will be given irregularly. They are intended to give theoretical insight to the project implementation and/or provide exam-like questions.