# CSC 430: Programming Languages I

## Instructional Information

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Office hours: M: 12-1, T: 12-1, W: 12-1, F: 12-2
or by appointment
Course Webpage: `http://www.csc.calpoly.edu/~akeen/courses/csc430`

## Lecture Time and Location

- Section 1
  - Lecture: MWF 9:10 am – 10:00 am, 14-252
  - Lab: MWF 10:10 am – 11:00 pm, 14-302
- Section 3
  - Lecture: MWF 2:10 pm – 3:00 pm, 08-121
  - Lab: MWF 3:10 pm – 4:00 pm, 14-301

## Course Objectives

- Understand the theoretical foundations of formal languages and automata.
- Apply this theory to the implementation of an interpreter.
- Explore the semantics of a programming language through the implementation of an interpreter.
- Gain experience in a different language paradigm (specifically, functional).

## Prerequisites: CSC/CPE 357 and CSC 349

## Texts

The course language reference is *Elements of ML Programming* by Ullman. You might also want a 445 text such as *Languages and Machines* by Sudkamp. Supplemental materials will be linked from the course webpage.

## Webpage

Clarifications, changes, etc. regarding the class and assignments will be posted to the course webpage (http://www.csc.calpoly.edu/~akeen/courses/csc430). Read it regularly, especially near when assignments are due. You are responsible for any announcements posted on the course website.

## Activities

### Reading

A reading schedule will be provided. This schedule outlines the order in which topics will be covered in lecture and the associated chapters and sections in the textbook that you should read. The lectures may not cover all of the material in the assigned reading, but such material may appear in homework assignments or exams.

**Class Participation**

The lectures are for your benefit. You should ask questions when you have them. I am more than willing to cover, in addition to the required material, topics in which you are specifically interested, but you have to let me know what those topics are.

**Assignments**

There will be seven (7) programming assignments.

**Exams**

There will be two quizzes, one midterm, and one final exam. The exams will cover general programming language concepts, the analysis and synthesis of specific concrete programs, and material based on the assignments. The exams will be open book and open note, but closed neighbor. Working the exercises at the back of the chapters in the textbook may improve your understanding and your performance on exams.

## Grading

The percentage breakdown for the course grade is as follows.

| Activity | % per | % total |
|---|---|---|
| Assignments | | 45 |
| ML Introduction | 5 | |
| Lexical Analyzer | 4 | |
| Parser | 8 | |
| Interpreter Phase I | 7 | |
| Interpreter Phase II | 8 | |
| Interpreter Phase III | 7 | |
| Interpreter Phase IV | 6 | |
| Quizzes | 2 | 4 |
| Midterm | 20 | 20 |
| Final | 31 | 31 |
| | **Total** | **100** |

Detailed point breakdowns will be provided for most assignments. Performance on the exams, especially the final, will weigh more heavily in assigning course grades in *borderline* cases.

A significant difference between homework scores and exam scores may result in an alternate grading scheme. For example, someone that scores 100% on all homework assignments yet fails both exams will fail the course. Make sure that you understand the homework assignments.

Simplicity, presentation, and neatness of your solutions are considered in the grading of assignments and exams.

What you turn in is exactly what will be graded. Be sure to turn in what you intend us to grade, e.g., all required parts and the correct version.

At a **minimum**, your solution to a programming assignment **must** load and compile to be considered for grading. Those that do not meet this minimum criterion will be returned with a score of zero. **Test your programs.**

## Regrades

In general, assignments to be considered for regrades must be submitted no later than one week after the graded assignments were made available. However, at the end of the quarter, assignments to be considered for regrades must be turned in earlier, as will be announced. The same is true for misrecorded grades. Scores for each assignment will be posted on Blackboard which is accessible from the MyCalPoly web page (http://my.calpoly.edu). Please check them to be sure they agree with your own records.

## Due Dates and Lateness

Programming assignments are to be turned in electronically. Assignments must be turned in ON TIME to receive credit. Except in the most extreme situations, **late assignments will not be accepted.**

If you cannot complete an assignment by the due date, hand in whatever you have done in order to receive partial credit. **Receiving partial credit, however, should not be your goal.**

Again, be certain that what you submit compiles.

## Missed Exams

Make-up or early exams will not be given except in the most extreme situations. If you must miss an exam due to extreme illness, etc. contact the instructor (by phone or by e-mail) or leave a message with the Department of Computer Science office (805-756-2824) *before* the exam. Be sure to leave both the reason for missing the exam and how to reach you.

## Collaboration and Cheating

### Policy on Collaboration

Each student is to do his or her own work on the assignments and exams. It is fine to talk with others about general approaches used to solve the assignments, *but* each student is to develop his/her own solution; collaborative efforts are **not** allowed. Students are not to view any other student's program code or exchange program code in any form (hardcopy or electronically). Sharing pseudo-code is not allowed.

In addition, using solutions from any other source is forbidden; in particular, using solutions (either instructors' or other students') from previous offerings of this course is not allowed. Using solutions found on the Internet is not allowed. Referring to previous solutions while developing your solution is not allowed.

Collaboration that goes beyond a high-level discussion of general approaches will be considered cheating. If you are unsure about what constitutes proper or improper collaboration, consult the instructor for guidance.

The exams are open book and open note, but there are restrictions on the materials you may bring to the exam. Copies of previous exams are not allowed under any circumstances.

To summarize: all assignments and exams are to be *individual* and *original* efforts.

### Policy on Cheating

**Don't.** Any instance of cheating or plagiarism will be referred to the Campus Student Relations and Judicial Affairs Office. The Cal Poly rules and policies are available on the CSRJA web site, `http://www.calpoly.edu/~saffairs/csrja/index.html`. Ask the instructor for clarification *beforehand* if the above rules are not clear.

## Computer Accounts

The compilers and interpreters for the programming languages we will use will be made available on the Computer Science department machines.

You may use other systems but you do so entirely AT YOUR OWN RISK. In particular,

- Some of the programs require data files or pieces of a program. Transferring them is your responsibility.
- Any problems (e.g., machine crashes) with other systems are your responsibility.
- You must first verify that the language implementation you will use provides the necessary language features.
- You are still responsible for any information posted to the website.
- You must be able to load your programs onto the CSC systems because you will be submitting programs via a script run on these systems, and your programs will be graded on these systems.

Be very careful and make your own backups as you work.

Free (as in they do not cost money, but may require that you agree to a user license) implementations of the compilers and interpreters for the languages we will be using are available on-line and will be linked to from the course website.

# The Last Page

This page is so I can gather a little information about you at the beginning of the class. Please fill it out, tear it off and leave it with me on the way out.

**Who are you?**

Name: _____
Section: _____
Major: _____
Email: _____
Enrollment: ____ Enrolled
____ Enrolled, thinking about dropping
____ Thinking about signing up
Programming Language(s) that you know or have used: _____
_____
Favorite Programming Language(s): _____
_____

**Class Expectations?**

Please take a minute to write out what your goals and expectations are for CSC 430. What do you want to learn? What do you expect to learn? Are these the same thing?