

Syllabus for Programming Language Concepts (PLC)

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Catalog Description

A study of the syntax and semantics of a diverse set of high-level programming languages. The languages chosen are compared and contrasted in order to demonstrate general principles of programming language design. The course emphasizes the concepts underpinning modern languages rather than the mastery of particular language details. Programming projects will be required.

Course Goals

The main goal of this course is to give the student breadth in the field of computer languages and programming. At the conclusion of this course the student will

be exposed to the basic design of several programming languages

understand several different programming paradigms

be in a position to choose the best technique or language from several choices for a particular purpose

You will find that you will be expected to pick up details of programming languages more quickly, as we will be examining several computer languages.

Texts

There are no required texts for this course although several books listed on the course web site might be useful.

There are also several books available for download (for free) or browsing on the web.

The course web site contains links to several of these

Grading Policy

The course consists of the activities shown below, which are weighted as indicated to compute the final grade:

Component	Weight
Homework	10%
Projects	40%
Midterm Exams	20%
Poster Presentation	10%
Final Exam	15%
Participation and Attendance	5%

Course Format

This class meets four times a week. During weeks 2, 4, 6, and 8 the Monday and Tuesday class will meet in ICL labs 3-5. The lab schedule may change and any changes will be announced during lecture.

There will be two exams during the term and a final poster session held during the scheduled final exam time.

Laboratories

Although it does not show on your class schedule some of the classes will meet in lab during the scheduled lecture time. Each of the four labs will be team labs. There will be four sessions and you must choose a different partner for each of the four projects. All labs will be done in teams of two. I will make up team assignments for labs 2, 3, and 4, and hand them out on the Thursday before the lab.

In industry you do not get to choose who you have to work with so this will be good practice.

Currently, the plan is to have the labs in weeks 2, 4, 6, and 8. The lab will continue from Monday to Tuesday for an hour each day.

Part of the lab will be due on the Sunday midnight following the lab and part will be due on the second Sunday following the lab (i.e., just before the next lab). You will therefore have almost one week to finish the first part of the lab and almost two weeks to finish the second part of the lab.

Labs will be handed out in lecture before the lab and available on the web at the course web page.

Currently, the plan for the labs is

week 2 - perl

week 4 - flex and bison (gnu's version of lex and yacc)

week 6 - common lisp

week 8 - prolog

All labs count towards your final grade - no grades will be dropped

Poster session

During the last week of class there will be a poster session presented by each student on a language of his or her choice. You will have to get prior approval of the language. Details will be announced in class. The poster session will be graded and be part of your final grade.

Exams

There will be two exams of 50 minutes each, worth a total of 20% of your final grade and weighted equally. You are expected to take exams during your scheduled lecture period; in general, we will not give make-up exams. However, we realize that some situations might arise that would prevent you from taking an exam (severe illness, accidents, etc.). Should this occur, you must inform your lecture instructor prior to the exam; you can either call him/her or leave a message with the staff in the Computer Science Department office (70-3000, telephone 475-2995 or 475-6179). Once you return, we will make specific arrangements regarding the missed exam.

Please note that oversleeping, cars that don't start, and other excuses of this ilk are not generally valid. It is your responsibility to get to class on time for exams. If you miss an exam and did not make prior arrangements for a makeup, you will receive a zero for it.

Final Exam

A cumulative final exam will be given. The exam is closed book and notes but you may bring one sheet of letter-sized paper with your own hand-written notes.

Academic Honesty

It is a shame that this must be stated at all, but there are always a few students who do not abide by the rules of proper academic conduct. For the record:

You may help each other freely to complete labs, as the purpose of the labs is to increase your understanding.

However, this does not mean that someone else can do your lab for you. Any lab you submit must contain a significant intellectual contribution by you.

The corollary is that you may not do someone else's work for them either. A willing supplier of the material is as guilty of academic dishonesty as the receiver.

Any help you receive from someone must be acknowledged in the work submitted. Failure to acknowledge the source of a significant idea or approach is considered plagiarism and is not allowed.

Of course, you may freely exchange information and help with your assigned team mate without acknowledgement as the lab is submitted by both of you.

Those who behave in a dishonest or unethical manner in computer science courses, or in their dealings with the Computer Science Department, are subject to disciplinary action. In particular, dishonest or unethical behavior in the execution of assigned work in a computer science course will be treated as follows:

- 1. For a first offense the student involved will receive a grade of zero on the assignment. [A stronger penalty may be exacted, if, in the judgment of the instructor, the offense involves a flagrant violation of basic ethical standards.]**
- 2. For a second offense, in the same or a different course, the student will receive a failing grade for that course.**
- 3. A third offense will be referred to judicial affairs.**

Furthermore, the following action will be taken for each person involved in the incident, whether currently enrolled in the course or not:

If the student is a computer science major, a letter recording the incident will be placed in the student's departmental file; otherwise, the letter will be forwarded to the student's department chair or program coordinator.

Violations of the Code of Conduct... can also result in suspension, expulsion and even criminal charges.

For most of you, such warnings are unnecessary. We have to mention this because otherwise some students would say, "but you never said I couldn't just copy Johnny's work and turn it in as my own."

Tentative Schedule

A tentative schedule will be on the course web page and will be updated with the latest information.

All changes will be announced in lecture.

While many course topics are covered by the lecture, the class presentations will not be sufficient to do the labs. The amount of material to be covered in this course is such that you will be required to do more outside reading to learn the more straight forward material, so we can concentrate on techniques and the more confusing aspects in lecture and lab. Some course topics may not be addressed directly, but you will be given class handouts for them. You are responsible for material handed out in class.

Getting Help

There are many people on campus who are both able and willing to help you when you have trouble understanding something. Resources include: your lecture instructor and the teaching assistants.

You may come any time during office hours without appointment to ask me any questions about the course. I am also available other time by appointment (so I will be there) or any time you see my door open.

Teaching assistants may also be able to help you. Their office hours are also posted on the bulletin board outside their office.

NOTE: While the teaching assistants are there to help you, they will NOT write your programs for you.

General Conduct

Student conduct will be evaluated in accordance with the Institute Policies and Procedures Manual and in particular Misconduct in Research and Scholarship and Code of Conduct for Computer Use. You should also have two related documents, the Code of Conduct for the Use of Department of Computer Science Facilities and the Policy on the Use of Computer Games on Department of Computer Science Facilities, which are refinements of the general Institute policies.

We will be learning about programs in this course that could do a great deal of harm. It is a violation of the Code of Conduct to interfere with anyone else attempting to use the facilities at RIT or use the facilities of RIT to harm the internet. Deliberate malicious activities will not be tolerated.

Policy on W and I Grades

RIT policy allows you to withdraw from a course with a grade of W on or before the Friday of the sixth week in the quarter. After this date, your instructor cannot give you a W, but must assign you a grade based on your work.

This course has been designed so that you can complete all the work in one quarter; thus, incomplete grades will be given only in the most exceptional circumstances, and then only by prior arrangement with your lecture instructor. Your lecture instructor has the final say in this matter.

Disclaimer

Every effort has been made to provide accurate information in this document. We reserve the right, however, to make changes to any facet of the course should circumstances warrant it. Any such changes will be announced in both lecture and lab.