CSC/CPE x317: Systems Programming

Instructional Information
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Course Webpage: http://www.csc.calpoly.edu/~akeen/courses/csc317

Lecture Time and Location

- Section 1
  - Lecture: MWF 9:10am - 10am, 38-201  
  - Lab: MWF 10:10am - 11am, 14-303

- Section 2
  - Lecture: MWF 2:10pm - 3pm, 33-289  
  - Lab: MWF 3:10pm - 4pm, 20-127

Course Objectives

- Gain experience with low-level programming in the UNIX environment.
- Learn to read and write programs of moderate complexity in the C programming language.
- Become familiar with standard UNIX user-level commands and the UNIX software development environment.
- Learn about the architecture of the UNIX operating system from a system-programmer’s perspective and be able to write programs that use operating system services (system calls) directly.
- Learn about resource management.

Prerequisites:
The prerequisites for this course are CSC/CPE 103 or CSC 109, and CPE 229.

Texts
The course textbooks are *The C Programming Language* by Kernighan and Ritchie and *Advanced UNIX Programming* by Rochkind.
Additional reference *Advanced Programming in the UNIX Environment* by Stevens.
Webpage
Clarifications, changes, etc. regarding the class and assignments will be posted to the course webpage (http://www.csc.calpoly.edu/~akeen/courses/csc317). Read it regularly, especially near assignment due dates.

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 textbooks 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 on exams.

Class Participation
The lectures are for your benefit. You should ask questions when you have them. If you are confused, then others may be as well, so ask questions and listen to those asked by others.

Assignments
There will be 6 programming assignments. Since this is a course on systems programming, there will be some additional constraints on some of these assignments. A program that simply “works” will not necessarily be sufficient for a perfect score. In particular, some assignments will have running time requirements (though they will never be so restrictive as to require excessive tuning). These requirements will factor into your score on an assignment.

The timing deduction will be computed according to the following equation (all others will be explained on the assignment handout).

\[
\left\lfloor \frac{\text{actual running time}}{\text{time restriction}} \right\rfloor \times 5\%
\]

For example, an assignment might have a running time requirement on a specific test case of 150 seconds. Due to poor algorithmic choices, a submission runs for 327 seconds (whereas most submissions completed in about 15 seconds). This submission would be penalized 10% \(^1\) of the total points possible.

Lab Exercises
There will be a set of lab exercises each week. The exercises for the week will be due by the end of the week and must be demonstrated in lab.

Exams
There will be two “midterm” exams and a final exam. The exams will emphasize insight and problem solving with the intent to measure understanding. Working the exercises at the back of the chapters in the textbook may improve your understanding and your performance on exams.

The exams will be closed book and closed note.

Grading
The percentage breakdown for the course grade is as follows.

<table>
<thead>
<tr>
<th>Activity</th>
<th>% per</th>
<th>% total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programming Assignments</td>
<td>6</td>
<td>36</td>
</tr>
<tr>
<td>Laboratory Exercises</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Final Exam</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

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

\(^1\) \([327/150] \times 5\% = [2.18] \times 5\% = 2 \times 5\% = 10\%\)
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.

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 and lab exercises 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.

At a minimum, programming assignments must 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.

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, labs, 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 code or exchange 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.

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.

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.
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

Class Expectations?

Please take a minute to write out what your goals and expectations are for CSC/CPE 317. What do you want to learn? What do you expect to learn? Are these the same thing?