Operating Systems
Spring 2015

"Computer Scientists develop the tools that allow others to make a difference in the world." Fred Brooks

Instructor:
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Office hours:
MWF 8:30-9:30, 1:00-1:30   TTh 10:30-11:30, 2:30-3:30

Texts:
Silbershatz et.al, <u>Operating System Concepts</u> <u>Essentials</u>. and Andersen, Paul, <u>Just Enough Unix</u>, Fifth ed. You will need both books right away!

Class Learning Outcomes
- Students will understand the interaction between hardware and software.
  - Students will be able to explain the purpose of the Operating System, and where it fits into the computer system as a whole
  - Students will be able to evaluate how a change in one part of the operating system will affect the operating system as a whole.
  - Students will develop a working knowledge of the UNIX/Linux operating systems
  - Students will be able to take from theory to design to implementation a module of an operating system.

- Students will have an understanding of the historical development, contemporary progress and societal role of computer science.
  - Students will be able to list the 5 tasks of the operating system, describe what each is, and justify why it is important.

Course Organization:
Lectures: Cover the highlights of chapters assigned – not a substitute for reading. Student versions of the lecture slides can be obtained from Canvas. These slides will contain homework assignments and due dates.

Friday activities: Each Friday there will be some kind of in-class activity reviewing what was learned the following week. Each activity will be graded. It may be a quiz, it may be an essay question, it may be a group activity. One Friday activity grade will be dropped. Friday activities cannot be made up. If there is an exam in a particular week, there will not also be a Friday activity. Homework problems will help prepare you for these activities. Homework problems are optional.

Labs: Frequent labs based on the Linux operating system, from the book, *Just Enough Unix* and other sources will be assigned. Lab sessions are mandatory. Unless otherwise stated, labs are due by the beginning of the next class period. If the lab requires a demonstration, you will be given one opportunity to demonstrate it. It will either be signed off as correct, or I will make notes regarding what worked and what didn't. **No late labs are accepted** but I will drop the lowest lab grade. An unfinished lab may be turned in on time for partial credit.

Exams: There will be 2 exams in addition to the final exam. These will only cover material presented since the last exam. If you will miss an exam for a school function, you must arrange to take it in advance. **If you ever miss an exam without giving me prior notice, there is a good chance you will receive a zero unless, of course, there was clearly an emergency.** Exam 1 is scheduled for **Feb. 13.** It will cover chapters 1 – 4 plus the appropriate chapters in the Unix book. Exam 2 is scheduled for **April 8** and will cover chapters 5-8 in your text.

Final Exam: Cumulative exam with an emphasis on material covered in the last part of the semester. The final is scheduled for **Friday of finals week at 10:30 PM**.

Simulation Project: A 5 week programming project based on process scheduling will be assigned. The entire project is due March 30, but there will be several intermediate due dates as well. In order to get full credit, all intermediate dates must be met as well as the final date. **Most aspects of this project (exceptions will be noted) must be completed using basic Linux/UNIX tools (non-GUI)**. Programs will be written in C++ using the basic Linux Operating System (command-line) and g++ compilers. All written projects will be completed using a Linux/Unix text editor.

Grading:

Friday activities	10%		Project	15%
Exams	30%		Final	20%
Labs	25%			

Final grades will be determined as follows:

100-93%	A	80-82%	B-	67-69%	D+
90-92%	A-	77-79%	C+	63-66%	D
87-89%	B+	73-76%	C	60-62%	D-
83-86%	B	70-72%	C-	0-59%	F

Attendance:

Attendance is expected at each class section. In the event of an absence you are responsible for the material covered in class and the assignments given that day. See the Point Loma Nazarene University Catalog for a statement of the university's policy with respect to attendance. Remember that missing more than one and a half week's worth of classes can result in a failing grade.

Academic Accommodations:

While all students are expected to meet the minimum academic standards for completion of this course as established by the instructor, students with disabilities may require academic accommodations. At Point Loma Nazarene University, students requesting academic accommodations must file documentation with the Disability Resource Center (DRC), located in the Bond Academic Center. Once the student files documentation, the Disability Resource Center will contact the student's instructors and provide written recommendations for reasonable and appropriate accommodations to meet the individual needs of the student. This policy assists the University in its commitment to full compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities (ADA) Act of 1990, and ADA Amendments Act of 2008, all of which prohibit discrimination against students with disabilities and guarantees all qualified students equal access to and benefits of PLNU programs and activities. **Students with learning disabilities who may need accommodations should discuss options with the instructor during the <u>first two weeks</u> of class.**

Class Enrollment:

It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

Academic Honesty

The Point Loma Nazarene University community holds the highest standards of honesty and integrity in all aspects of university life. Academic honesty and integrity are strong values among faculty and students alike. Any violation of the university's commitment is a serious affront to the very nature of Point Loma's mission and purpose. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. Such acts include plagiarism, copying of class assignments, and copying or other fraudulent behavior on examinations.

A student who is caught cheating on any item of work will receive a zero on that item and may receive an "F" for the semester. See the PLNU Catalog for a further explanation of the PLNU procedures for academic dishonesty.