

CS460 Operating Systems

Course Syllabus

Spring 2014

Catalog Description

This course provides a hands-on introduction to operating systems including the development of a command line shell and kernel modules. Topics covered include processes and threads, CPU scheduling, memory management, I/O systems, distributed file systems, operating system history and design, and synchronization. Prerequisite: CS 300 with a minimum grade of C. Offered alternate years. 4 credits.

Objectives

- Purpose of the Operating System
- Design Issues
- Processes/Threads
- Interrupts
- Scheduling/Dispatching/Context Switch
- MultiProcess/MultiCore Systems
- History of the Operating System
- Structure (monolithic/modular/micro kernel)
- Devices
- User vs System mode
- Concurrency/Deadlock
- Memory Management

Instructor Details

Professor:	Douglas J. Ryan
Email:	ryandj@pacificu.edu
Office:	Strain 201
Phone:	(503) 352-2135
Office Hours:	MWF 10:30am - 11:30am or by appointment

Course Details

Course Title:	CS460 Operating Systems
Prerequisite:	CS300 Data Structures with a grade of C or better
Required for:	Computer Science Major
Meeting Times:	MWF 4:45pm-5:50pm There is no designated lab for this course although some days will be lab days
Location:	Marsh LL15
Textbooks:	<u>Operating System Concepts (9th)</u> by Abraham Silberschatz Wiley 978-1-118-06333-0
Course Website:	http://zeus.cs.pacificu.edu/ryand/cs460/2014/

Course Assessment

As a general rule of thumb, students are expected to spend 2 hours outside of class for each hour of class time. This means that you should be spending 8 hours per week outside of class on the readings, projects, and homework. At least 1 hour a week should be spent on non-assignment based studying

Grade Distribution:

Homework/Programs/Projects	40%
Unscheduled Quizzes (open-note hardcopy only)	10%
2 Exams	30%
Final Exam	20%

Programming Projects Grading:

Successful Execution	70%
Acceptable structure, style, documentation, and efficiency. You must follow the C++ Coding Standards, version 6.1	30%

Percent Breakdown:

			[92,100]	A		[90,92]	A-
[88,90)	B+		[82,88)	B		[80,82)	B-
[78,80)	C+		[72,78)	C		[70,72)	C-
[68,70)	D+		[60,68)	D			
			[0,60)	F			

All exams and quizzes must be taken in PENCIL!!!!

Tools

1. Eclipse Kepler IDE
2. gcc / gdb
3. Subversion / Subclipse
4. Valgrind
5. GNU Make

Language(s)

- C

Operating System(s)

- Linux

Important Dates

Tentative dates for Exams:

Exam 1: Friday, February 28, 2014

Exam 2: Friday, April 11, 2014

Spring Break:

Saturday, March 22, 2014 – Sunday, March 30, 2014 (No Class)

Senior Project Day:

Wednesday, April 23, 2014 (No Class)

Reading Day:
Wednesday, May 7, 2014

Date of Final:
Friday, May 9, 2014 3:00pm-5:30pm

Academic Calendar:
<http://www.pacificu.edu/as/calendar/>

Course Policies

Attendance: Attendance at every class is critical to your success in this course. I expect you to be on time and ready to go once it is 4:45pm and that you stay until the end of class. You will not be allowed into the classroom once I close the door and start teaching. Any missed lecture is your responsibility to make up; just remember that if you fall behind, it may be very difficult for you to catch up.

- I reserve the right to raise or lower your grade based on class participation and attendance. Specifically, I may lower your grade or may officially withdraw you from the course through the tenth week of the semester for poor attendance or participation. Further, your final grade may be lowered by 1/3 of your final course grade for each day (or portion thereof) of class missed. Please notify me PRIOR to class if you must miss class for any reason.
- No early or late exams/final will be given. No incompletes will be given.

Programming Assignments: All assignments are to be programmed using the above mentioned tools. Both the electronic copy and hardcopy of your assignments are due at 4:45pm on the day that they are due.

- The hardcopy must be placed on the instructor's desk before 4:45pm on the day the assignment is due. If the hardcopy uses more than one sheet, then all sheets must be stapled in the upper-left corner. The code must be printed in color. Failure to submit a hardcopy of the assignment will result in a loss of 30% of the assignment points.
- The electronic copy must be submitted using the submit script as we did in CS300. Failure to submit an electronic copy will result in a loss of 70% of the assignment points.
- A program that does not successfully compile or produces no output loses 70% of the assignment grade.
- Assignments can be turned in up to 24 hours late with a penalty of 10% of the grade. If the assignment is between 24 and 48 hours late you will lose 20% of your grade. Anything turned in later than 48 hours of the assignment deadline will NOT be accepted.
- Make sure that you test your programs before submitting them. You may only submit your assignment once.
- All code in any form generated from this course becomes the intellectual property of Pacific University. You may not share this code with anyone without obtaining written permission from Pacific University.
- Neither computer failure, software failure, nor lack of computer access are accepted as excuses for late programs; therefore, start work on the programs as soon as they are assigned, and don't put them off until the last minute. Further, corruption of programs due to bad disk media is also not accepted as an excuse for late programs; therefore, always keep a current backup of all programs on a separate disk. Please note that the Computer Science departmental servers are not backed up.

Academic Dishonesty: Pacific University has no tolerance for academic misconduct/dishonesty. It is university policy that all acts of misconduct and dishonesty be reported to the Associate Dean for Student Academic Affairs. Sanctions that may be imposed for such misconduct range from an “F” for the assignment, an “F” for the course, and suspension or dismissal from the university. Forms of academic misconduct include but are not limited to plagiarism, fabrication, cheating, tampering with grades, forging signatures, and using electronic information resources in violation of acceptable use policies.

- For programming assignments, plagiarism takes the form of, *but is not limited to* copying code from someone else, whether copying files, glancing at someone else’s code, typing from someone else’s notes, typing from someone’s description of a solution (written or verbal) or typing while they dictate. The source can be a classmate, former student, website, program listing found in the trash, or anything else. Furthermore, plagiarism even on a small part of the program is cheating.
- You should also note that aiding someone else’s cheating also constitutes cheating. You should never leave your code where someone else could have access to it, such as staying logged onto a machine or placing solutions in the recycling bin where another student may take it.
- Sanctions that may be imposed for academic dishonesty are:
 - First offense for cheating: 12% subtracted from your final course grade
 - Second offense for cheating of any kind: `F’ in the course

Other:

- You may be asked to leave the class if you are causing a distraction e.g. cell phone ringing, talking, etc.
- If you have a complaint regarding a grade on an assignment or exam, write a one paragraph description of why you feel the grade is incorrect and deliver it to the instructor within five working days (M-F are considered working days) of when the graded material was returned to you. I will not consider any grade changes later than five working days after the graded material was returned.

Learning Support Services for Students with Disabilities: If you have documented challenges that will impede your learning in any way, please contact our LSS office in Scott Hall (ext.2107). The Director will meet with students, review the documentation of their disabilities, and discuss the services that Pacific offers and any appropriate ADA accommodations for specific courses.

The Tutoring and Learning Center is located in Scott Hall 127: The center focuses on delivering one-on-one and group tutoring services for math and science courses and writing skills in all subjects. Students should consult with the center’s director for information on tutoring available for other subjects. Day and evening hours; walk-ins welcome!