Chico Computer Science

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California State University, Chico

CSCI 152–01/02: *Operating Systems Programming*

Prerequisites

CSCI 151 (Algorithms and Data Structures) and CSCI 171 (Computer Architecture) or equivalent

Description

Operating system concepts and techniques; surveys important aspects of modern operating systems, including I/O and interrupt structure, system structure, memory management, and processor management. 2.0 hours discussion, 2.0 hours activity.

Students will also be required to open and maintain a *WebCT* account (`online.csuchico.edu`) to access an up–to–date on–line calendar of events/progress, on–line quizzes, etc.

Lecture

MW 3:00 p.m. – 4:15 p.m. O'Connell Technology Center, OCNL 254

Instructor

Dr. Benjoe A. Juliano (*a.k.a.* Dr. J)
`Juliano@ecst.csuChico.edu`
`http://www.ecst.csuchico.edu/~juliano/`
`http://www.ecst.csuchico.edu/~juliano/csci152`
`http://www.ecst.csuchico.edu/~juliano/OS`

Office Hours

9:00 a.m. – 11:00 a.m. MW (remote students' priority Wednesdays) OCNL–222, ❒ (530) 898–4619
Please see `http://www.ecst.csuchico.edu/~juliano/Teaching` *for additional hours.*
Other times strictly by appointment only; walk–ins welcome.

Lab Sections

Section 01	W	5:00 p.m. – 5:50 p.m.	OCNL 124
Section 02	W	5:00 p.m. – 5:50 p.m.	OCNL 124

There is one additional requirement for this class. Students are expected to have an account with one of the campus Unix systems. *All programming assignments will be done on the Unix platform.* Therefore, all students are expected to familiarize themselves with the Unix operating system. Although some Unix topics will be discussed, this is not a class on Unix; hence, you will be expected to discover other things on your own. You must take responsibility in honing your computing skills. Students should take advantage of gaining experience functioning within both the PC and Unix platforms.

Programming assignments written for other platforms will not be accepted.

Required Text

Operating System Concepts, 6/e
Abraham Silberschatz, Peter B. Galvin, and Greg Gagne, 2002.
John Wiley & Sons, Inc., New York.
`ISBN 0–471–41743–2`
`http://www.bell–labs.com/topic/books/os–book/`

Course Objectives

The objectives of this course are to:

a) help students become familiar with the fundamental concepts of operating systems;
b) help students become competent in recognizing operating systems features and issues; and
c) provide students with sufficient understanding of operating system design and how it impacts application systems design and performance.

Course Outcomes

Upon successful completion of this course, the student shall be able to:

a) exhibit familiarity with the fundamental concepts of operating systems;
b) exhibit competence in recognizing operating systems features and issues; and
c) apply a mature understanding of operating system design and how it impacts application systems design and performance.

Grade Evaluation

This course is designed to give students an equal opportunity of exposure to both Theory and Practice. Students are expected to demonstrate proficiency in both theoretical and practical aspects of this course. Grades will be evaluated based on the following scheme:

Theoretical Component (50%)		Practical Component (50%)	
30%	Midterm Exam 1; Wed, Sep 26, class time	30%	(In−class or online) Quizzes
30%	Midterm Exam 2; Wed, Nov 7, class time	70%	Programming Assignments
40%	Final Exam, Mon, Dec 17, 2:00−3:50 p.m.		

Students are required to earn a C− (70%) or better in **both** the theoretical and practical components; otherwise, the *minimum* of the scores of the two components will be used to calculate the student's final grade.

Final Grades

Final grades shall be expressed as a percentage of the maximum possible score of all evaluated materials. Assigned letter grades are based on the following scheme:

Real Interval	Letter Grade	University Definition
[96,100] [90, 96)	A A−	Superior Work
[87, 90) [83, 87) [80, 83)	B+ B B−	Very Good Work
[77, 80) [73, 77) [70, 73)	C+ C C−	Adequate Work
[66, 70) [60, 66)	D+ D	Minimally Acceptable Work
[0, 60)	F	Unacceptable Work

It is Dr. J's policy not to assign a grade of D or D+ to graduate students; any graduate student with a class standing less than C− (70%) earns a final grade of F.

Guidelines/ Policies

Students registered for this course are held responsible for reading and understanding Dr. J's course guidelines and policies, as indicated by the following on−line documents:

General Policies	`/~juliano/Teaching/Policies.html`
Academic Policies	`/~juliano/Teaching/Academic_Policies.html`
Notes on Academic Integrity	`/~juliano/Teaching/Academic_Integrity.html`
Students with Disabilities	`/~juliano/Teaching/Disability.html`
CSUC Policy on Use of Computing and Communications Technology	`http://www.csuchico.edu/prs/EMs/EM97/em97_18.htm`

Tentative Schedule

Week	Week of	Chapter	Topic
1	Aug 27	1	Introduction, background material
2	Sep 3	2	Computer−System Structures
			◆ *Sep 7 (F), last day to add or drop classes without special permission of instructor and department chair.*
3	Sep 10	3	Operating−System Structures
4	Sep 17	4	Processes
			◆ *Sep 21 (F), Census Date, no adding, dropping of classes, or changing of grade option beyond this date without a serious and compelling reason approved by the instructor, department chair, and college dean.*
5	Sep 24	5	Threads
			MIDTERM EXAM 1: ***September 26 (Wednesday), class time***
6	Oct 1	6	CPU Scheduling
7	Oct 8	6,7	CPU Scheduling; Process Synchronization.
8	Oct 15	7	Process Synchronization
9	Oct 22	8	Deadlocks
10	Oct 29	9	Memory Management
11	Nov 5	10	Virtual Memory
			MIDTERM EXAM 2: ***November 7 (Wednesday), class time***
12	Nov 12	11	File−System Interface
	Nov 19		***T H A N K S G I V I N G B R E A K***
13	Nov 26	12	File−System Implementation
14	Dec 3	13	I/O systems
15	Dec 10	14	Mass storage structures
16	Dec 17		**FINAL EXAM**: ***December 17 (Monday), 2:00 p.m. − 3:50 a.m.***

NOTE: The above schedule is subject to change. It is your responsibility to make sure you know what is to be covered in the following weeks and if any changes were made on the schedule.