

EE 4374 --- Operating Systems Design

Spring 2017

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Texts: Operating System Concepts Essentials (2nd Edition)
by Abraham Silberschatz, Peter Galvin, and Greg Gagne
TCP/IP Sockets in C (2nd Edition)
Michael Donahoo and Kenneth Calvert

Optional Reference Texts:

The C Programming Language by Brian Kernighan and Dennis Ritchie
UNIX Systems Programming: Communication, Concurrency and Threads
by Kay Robbins and Steven Robbins

Course Description: Design and implementation of single and multiuser operating systems. Topics include OS structure, process management, interprocess communication within and between CPUs, memory management, file systems, and I/O. Contemporary operating systems provide design examples.

Prerequisite: *EE 2372 Software Design I* and *EE 4379 Computer Arch.* (C or better)

Class Hours: Tuesdays and Thursdays 9AM to 10:20AM, CCSB Room 1.0202

Office Hours: Tuesdays and Thursdays 1:30PM to 3PM, ENG A-340

Course Outline:

Week 1: Introduction (Chap. 1)
Weeks 1-2: Operating Systems Structures (Chap. 2)
Week 3: Introduction to Processes/Threads (Chaps. 3 and 4)
Weeks 4-5: Process Scheduling (Chap. 5)
Weeks 6-7: Process Synchronization (Critical Section Problem) (Chap. 6)
Week 7: Network Communication (Intro to Socket Programming) (Textbook 2)
Week 8: **Midterm Exam**
Weeks 8-9: Deadlocks: Characterization and Prevention (Chap. 7)
Weeks 10-11: Memory Management (Chaps. 8 and 9)
Weeks 12-13: File Systems (Chaps. 10 and 11)
Weeks 14-15: Input/Output Systems (Chap. 13)

Grading:

Participation	5%
Homework/Quizzes	20%
Labs	25%
Midterm	25%
Final	25%

Academic Dishonesty:

As an entity of The University of Texas at El Paso, the Department of Electrical and Computer Engineering is committed to the development of its students and to the promotion of personal integrity and self responsibility. The assumption that a student's work is a fair representation of the student's ability to perform forms the basis for departmental and institutional quality. All students within the Department are expected to observe appropriate standards of conduct. Acts of scholastic dishonesty such as cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in the whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts will not be tolerated. Any case involving academic dishonesty will be referred to the Office of the Dean of Students. The Dean will assign a Student Judicial Affairs Coordinator who will investigate the charge and alert the student as to its disposition. Consequences of academic dishonesty may be as severe as dismissal from the University. See the Office of the Dean of Students' homepage (Office of Student Life) at <http://studentaffairs.utep.edu/dos> for more information.

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