CE 155 – Operating Systems
2nd Semester 2003-2004 Course Syllabus (Sections A and B)

Course Overview

This is an introductory course on the internal operations and fundamental principles of modern operating systems. Specifically, this course will cover core concepts such as processes and threads, deadlocks, memory management, and file systems. This course also serves as an introduction to the UNIX/Linux operating systems. Assigned programming exercises will introduce the student to the basics of UNIX/Linux shell and system programming.

Instructor
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Consultation Hours
7:30 – 8:30 am
Mondays, Wednesdays, and Fridays
and by appointment

Course Coverage

A. Introduction: *definition, history, basic concepts, system calls, structure*
B. Processes and Threads: *interprocess communication, scheduling*
C. Deadlocks: *detection, recovery, avoidance, prevention*
D. Memory Management: *swapping, virtual memory, replacement algorithms, segmentation*
E. Input/Output: *disks, clocks, character-oriented terminals, graphical user interfaces, power management*
F. File Systems: *directories, file system implementation, examples*
G. Security: *cryptography basics, authentication, attacks, protection mechanisms, trusted systems**
H. Case Study: Unix and Linux: *overview, processes, memory management, I/O, file system, security**
I. Case Study: Windows 2000*

* - Optional (if time permits)

Course Schedule

Lecture:	Monday, Wednesday, Friday; 1:30 – 2:20 pm (Section A)
	Monday, Wednesday, Friday; 2:30 – 3:20 pm (Section B)
Lecture room:	F-115 Faura Hall

Textbook

Modern Operating Systems (2nd Edition)
by Andrew S. Tanenbaum

Suggested References

Operating System Concepts (6th Edition)
by Silberschatz, Galvin, and Gagne

Operating Systems: Internals and Design Principles (4th Edition)
by William Stallings

Advanced Programming in the UNIX Environment
by W. Richard Stevens

Website

Course announcements, lecture notes, and grades may be posted on the website on a regular basis. Students are expected to check it regularly.

URL
http://www.amparo.net/ce155

Class Policies

1. The University policy on attendance will be observed.
2. Students absent during recitations and quizzes will get no credit for that particular requirement.
3. All homework assignments are due at the beginning of the class unless otherwise stated. Late homework assignments will not be accepted.
4. Late programming exercises are subject to 10% late penalty per day.
5. Any form of dishonesty or cheating is not tolerated. While all students are encouraged to openly discuss and ask questions, the final work to be submitted must be the student's own.

Grading System and Course Requirements

A	92-100		
B+	87-91+	Long Exams**	40 %
B	81-86+	Practical***	25 %
C+	76-80+	Final Exam	20 %
C	70-75+	Quizzes/Homework/Recitation	15 %
D	60-69+		
F	< 60		

** - There will be 2 to 3 long exams each covering 2 to 3 chapters of the book.
*** - The *Practical* grade will come from 2 to 3 assigned Unix exercises.