

CSCI 430 OPERATING SYSTEMS

CSCI 430 001 80728

Fall, 2012 (8/27/2012 through 12/14/2012)

Tentative Course Syllabus

INSTRUCTOR:

Ünal Sakoglu, Ph.D.

Assistant Professor, Department of Computer Science

Texas A&M University - Commerce

Instructor Office: JOUR209

Instructor Office Hours: Tues, Wed, Thurs (1:30pm to 4:30pm)

e-mail: unal.sakoglu@tamuc.edu

Office Phone: 903-886-5242

CLASS MEETINGS:

Time: Tues & Thurs 11:00AM-12:15PM

Location: JOUR200

TEXTBOOK:

Operating Systems Internals and Design Principles - 7th Edition

by William Stallings Prentice-Hall Inc., 2012, ISBN: 978-0-13-230998-1

SUPPLEMENTARY READING (RECOMMENDED, NOT MANDATORY):

Operating System Concepts - 8th Edition by A. Silberschatz, P.B. Galvin, G. Gagne
John Wiley & Sons, Inc., 2012, ISBN: 978-1-118-11273-1.

COURSE DESCRIPTION:

General theory and concept behind operating system design are studied. Topics include operating system structures, memory management, process scheduling, process synchronization and communication, deadlocks, and case studies of other commercially available operating systems.

Credit hours: 3.

STUDENT LEARNING OUTCOMES:

1. List and understand basic functions and parts of an OS.
2. Understand modern memory management techniques, including virtual memory.
3. Know fundamental concepts of OS such as multiprogramming and multiuser systems.
4. Understand process management algorithms, structures and threading.
5. Understand issues with concurrent and parallel programming, including deadlocks.
6. Learn specific mechanisms for modern OS such as Unix, Linux and Windows 7.

COURSE OUTLINE/CONTENT:

Part One: Background (Chapters 1, 2)

Chapter 1. Computer system overview (Week 1)

Chapter 2. Operating system overview (Week 2)

Part Two: Processes (Chapters 3, 4, 5, 6)

Chapter 3. Process description and control (Week 3 and 4)

Chapter 4. Threads (Week 5 and 6)

Week 6: Exam 1

Chapter 5. Concurrency I: Mutual exclusion (Week 7 and 8)

Chapter 6. Concurrency II: Deadlock and starvation (Week 8 and 9)

Part Three: Memory (Chapters 7, 8)

Chapter 7. Memory management (Week 10 and 11)

Chapter 8. Virtual memory (Week 11 and 12)

Week 12: Exam 2

Part Four: Scheduling (Chapters 9, 10)

Chapter 9. Uniprocessor scheduling (Week 13)

Chapter 10. Multiprocessor and real-time scheduling (Week 14)

Final Week: Final Exam

*Extra material from Chapters 11 and through 16 may be covered if time permits.

EXAMS & GRADING:

Attendance & Quizzes 10%

Homeworks and Programming Projects 20%

Exam 1 (Chapters 1-4) 20%

Exam 2 (Chapters 5-8) 20%

Final Exam (Comprehensive of all the material covered) 30%

COURSE REQUIREMENTS:

There will be regularly assigned homework problems. There will be programming assignments, which will require the students to spend time in the computer laboratory. To plan a minimum of three hours of outside preparation for each hour of class is a safe time allocation for successfully completing the course. Due dates for all assigned materials will be announced in class in advance. It is the student's responsibility to have all assignments ready on time. Any student who has to be absent on an assignment due date must arrange to have the assignment submitted early. Late assignment may not be accepted or may be penalized. Additional requirements of the course include a number of in-class quizzes (announced or unannounced), homework assignments and exams/tests.

ACADEMIC ETHICS:

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (See Student's Guide Handbook, Policies and Procedures, Conduct). Ethics include the issue of plagiarism, and copying code for programming assignments is just as serious as any other type of plagiarism. If you are caught sharing or using other people's work, you will receive a 0 grade and a warning on the first instance. A subsequent instance will result in receiving an F grade for the course, and possible disciplinary proceedings.

ATTENDANCE POLICY:

Students are expected to be present at all class lectures. If a student is absent from class on the due date of any assignment, they are expected to make alternative arrangements to assure that the assignment is turned in ON TIME. Any student wishing to withdraw from the course must do so officially as outlined in the class schedule. **THE INSTRUCTOR CANNOT DROP OR WITHDRAW ANY STUDENT.**

COURSE REQUIREMENT DEADLINES:

Credit will be given for ONLY those exam(s), program(s), and/or project(s) turned in no later than the deadline(s) as announced by the instructor of this class unless prior arrangement has been made with the instructor.

METHOD OF EVALUATION (TENTATIVE):

Final average Letter grade

90 – 100 A

80 – 89 B

70 – 79 C

60 – 69 D

Below 60 F

STUDENTS WITH DISABILITIES REQUIRING ASSISTANCE: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library

Room 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

StudentDisabilityServices@tamuc.edu