

COMP7500 Advanced Operating Systems Syllabus – Spring 2012

MWF 8:00 - 8:50pm, Shelby 1122

Instructor: Dr. Xiao Qin

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Class Web Page

Homeworks and announcements are posted on the class web page:

<http://www.eng.auburn.edu/~xqin/courses/comp7500>

Handout, assignments, and important course information will be posted periodically on the class web page, which you have to regularly check.

Objectives

The objectives of this class include:

- (1) To understand the state of the art in operating systems and distributed systems, and how to design modern operating systems.
- (2) To understand how to engage in systems research in general and operating systems research in particular..
- (3) To investigate novel ideas in operating systems through a semester-long research project.

Topics Covered (These topics may change)

- Security
- File Systems
- Encrypted File Systems
- Energy Efficient Storage Systems
- Embedded Operating Systems
- Characterization of distributed systems
- Distributed system models
- Replication
- Peer-to-Peer systems

Exams and Grading

Mid-term	20%
Final Exam	20%
Class Participation	10%
Research Projects	40%
Presentation	10%
A [90, 100], B [80,90), C [70,80), D [60,70), F [0,60)	

Note: In order to pass the class, you must receive at least 60% credit on the Individual Research Project, regardless of performance on exams.

Assessment

Exams: Midterm Exam, Final Exam

Questions will be derived from lectures, material taught only in class, and from assignments.

Individual Research Project:

Individual Projects will be graded as follows:

Analysis, Design, and Testing Documents: 30%

Adhering to coding style: 10%

Program meets design specifications: 60%

Textbook and Reading

- Tanenbaum, Modern Operating Systems (Background)
- Silberschatz, Operating Systems Concepts (Background)
- Coulouris, et al., Distributed Systems: Concepts and Design, 2nd ed., 004.36 C85d2
- Lynch, Distributed Algorithms, 004.36 L98d
- Lynch, et al., Atomic Transactions, 005.74 A88i
- Bernstein, et al., Concurrency Control and Recovery in Database Systems, 004.35 B53c
- Casevant & Singhal, Readings in Distributed Computing Systems, 004.36 C33r
- Ananda & Srinivasan, Distributed Computing Systems: Concepts and Structures, 005.36 D614
- Filman & Friedman, Coordinated Computing: Tools and Techniques for Distributed Software, 004.36 F48c
- Andrews, Concurrent Programming: Principles and Practice, 004.65 P48c
- Jain, The Art of Computer Systems Performance Analysis, 004.24 J25a 004.36

Attendance

Class attendance is mandatory. This is a graduate class; therefore, students will have to actively participate in class. It is believed that if you miss many classes (more than 6), there is a strong likelihood that you will not pass the class. Please notify me in advance if you will attend conferences, research meetings, or the like.

Cheating

Unless otherwise specified in writing, all assignments are individual projects. If any assignment permits teamwork, it will be explicitly stated so in the assignment, and the work must be only the work of the people on the team. Students are *encouraged* to work together on homework assignments. However, you have to explicitly acknowledge any help received from other students during the course of the preparation of your homework solutions.

If you make use of ideas obtained from previous work of another person, you must give credit by commenting in your report, explaining where you obtained ideas, what you have used, and who developed the ideas. If you use any code provided by another person, you must obtain permission from the copyright owner, then comment in your code, including a statement explaining where you found the code and who is the author. Failure to follow these rules will be considered a violation of the Academic Honor Code.

Special Accommodations

A student in need of special accommodations must bring that need to my attention within the first two weeks of class. The need must be properly documented.

Study Hints

- Ask questions in class.
- At the first sign of difficulty, talk to your instructor.
- Form a study group and meet regularly.
- Construct chapter summaries noting concepts, definitions, & procedures.