CMSI 587
OPERATING SYSTEMS (GRADUATE LEVEL)
http://myweb.lmu.edu/dondi/spring2006/cmsi587

Spring 2006 — Pereira 120
T 6:30 – 9:30pm, 3 semester hours
Office Hours: TR 1:30–3pm, 4:30–6pm

John David N. Dionisio, PhD
e-mail: *dondi@lmu.edu*, AIM: *dondi2LMU*
Doolan 106; (310) 338-5782

Course Objectives

The primary objective of this course is to master the fundamental concepts behind modern operating systems through a comparative study of real-world systems. Understanding conceptual issues and mechanisms on their own, without confusing them with a particular operating system's specific policy, implementation, or interface, is crucial to being able to learn, use, and control any system effectively and quickly.

Course Requirements

Programming proficiency in a systems-level language, typically C; a prior course in Computer System Organization (LMU CMSI 284 or equivalent). Familiarity with Java, shell scripting, and system administration is also beneficial.

Materials and Texts

- Abraham Silberschatz, Peter Baer Galvin, and Greg Gagne. *Operating System Concepts*, 7th edition. John Wiley & Sons, 2005. — *a.k.a. "SGG"*

- Assorted handouts, articles, and sample code to be distributed throughout the semester.

Additional information is also available on the Worldwide Web; do not hesitate to search for and find additional sources of information regarding the concepts, techniques, tools, and paradigms that we will discuss.

Course Work and Grading

Graded coursework consists of accumulated homework (20%), 1 midterm (20%), 1 research paper (25%), 1 paper presentation (10%), and 1 final exam (25%). Letter grades are determined as follows: ≥ 90% gets an A– or better; ≥ 80% gets a B– or better; ≥ 70% gets a C– or better. The instructor may curve grades upward based on qualitative considerations such as degree of difficulty, effort, class participation, time constraints, and overall attitude throughout the course. Grades are never curved downward.

Homework

Homework consists of questions, exercises, and programming assignments to be given throughout the semester. Homework is where you can learn from your mistakes without grading penalty: if you do the work and submit it on time, you will get full credit, regardless of correctness. What goes around comes around: the effort you put into your homework pays off in the tests and the research paper. The homework submission deadline is always the beginning of class on the designated due date; the due date is encoded in the homework number. Submissions after the deadline receive half credit, period. Extra credit homework may be assigned; fulfilling this is counted *on top of* the 20% allocation of homework to your final grade.

Research Paper and Presentation

You are asked to write and present a near-publication quality paper that is either (1) an in-depth study, from concept to implementation, of a particular operating system concept, service, or construct, or (2) a report/survey on a bleeding-edge or obscure but academically significant area of operating systems research from the literature. Prior to launching full-bore into the paper, you will first need to submit a *prospectus* that we will refine together until we agree on its scope and subject matter. The prospectus, which counts as a homework assignment, is due at the beginning of our February 7 class (and is

therefore part of <u>Assignment 0207</u>), and we shall try to finalize it by <u>February 21</u> at the latest. The paper and presentation are due at the beginning of our last class, <u>April 25</u>.

To compel you to focus on the content of the paper as opposed to busy work such as formatting and reference management, the prospectus and paper must be written using LaTeX. If necessary, we can talk about LaTeX in class, and templates to get you started will be provided.

There are no hard limits on paper length or format, but 10–20 pages in LaTeX's default article format, not including the list of references cited, is typical. Your presentation should be around 15 minutes long. Your work will be evaluated along the following criteria:

1. *Content (40%):* What is the quality of the work? Specific assessment of content will depend on the type of paper or topic chosen.

2. *Organization (30%):* Is the paper well-structured? Are concepts and the flow of ideas easy to follow? Are distinct sections or topics clearly identified?

3. *Writing (20%):* Are statements clear and easy to follow? Is the language precise, unambiguous, and grammatically correct?

4. *Polish (10%):* Is the content properly proofread? Are there many misspellings, typos, or other formatting faux pas?

Tests

The midterm is initially scheduled for <u>February 21</u>. The final exam is scheduled for <u>May 2</u>. All tests are open-*paper*-everything; no sharing. "Open computer" *might* also be allowed depending on the scope, subject matter, or circumstances. You may neither solicit nor give help while the exam is in progress. Late and/or missed tests are handled on a case-to-case basis; in all instances, talk to me about them.

Attendance

I am not a stickler for attendance, but I do like having a full class. Remember that the late registration and change of program deadline is January 13. The deadline for withdrawal or credit/no-credit status is <u>March 17</u>.

University Policy on Academic Honesty

Loyola Marymount University expects high standards of honesty and integrity from all members of its community. Applied to the arena of academic performance, these standards preclude all acts of cheating on assignments or examinations, plagiarism, forgery of signatures or falsification of data, unauthorized access to University computer accounts or files, and removal, mutilation, or deliberate concealment of materials belonging to the University Library.

Course Schedule

This schedule may change based on the actual ebb and flow of the class; deadlines, exams, and university dates (italicized) are less likely to change than lecture topics.

January	Operating systems overview; process management
January 13	*Last day to add or drop classes for a 100% tuition refund*
February	Memory management
February 7	Research paper prospectus due
February 21	Midterm; topics finalized
March	Storage management
March 17	*Last day to withdraw from classes or apply for Credit/No Credit grading*
April	Distributed systems; additional topics (time permitting)
April 25	*Paper and presentations due*
May 2	*Final Exam, 6:30pm*

You can view the class calendar on the Web at *http://ical.mac.com/dondi/LMU*. If you have an iCalendar-savvy client (i.e., Mozilla Calendar, Ximian Evolution, KOrganizer, Apple iCal, etc.), you can subscribe to the class calendar at *webcal://ical.mac.com/dondi/LMU.ics*. On-the-fly updates and adjustments to the class schedule will be reflected in this calendar.