CSCI 3323 (Principles of Operating Systems), Fall 2011
Syllabus

1 Course description

This course introduces the fundamentals of operating systems design and implementation, following the guidelines established by the Association for Computing Machinery (described in Computer Science Curriculum 2008[1]).

Course topics

- Role and purpose of operating systems.
- History of operating systems.
- Processes and process management, including a discussion of concurrency and related issues.
- Memory management.
- Input/output and device management.
- File systems.
- Operating system security.
- Other topics as time permits.

2 Basic information

Class meeting times and location

- MWF 12:30pm – 1:20pm, HAS 228

Prerequisites

- CSCI 2321

Instructor contact information

- Dr. Berna Massingill
- Office: HAS 201L
- Office phone: (210) 999-8138
- E-mail: `bmassing@cs.trinity.edu`

Office hours

A current schedule of office hours can be found on my home Web page (`http://www.cs.trinity.edu/~bmassing`). If I'm not in my office during office hours, I should be somewhere in the building, perhaps in one of the labs helping another student, and there will often be a note on my door saying where to find me.

In addition to scheduled office hours, you're welcome to drop by and see if I'm in my office and free to talk, or you can make an appointment by calling me or sending me e-mail.

E-mail is almost always a good way to reach me; I normally check it fairly often and reply promptly.

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[1]`http://www.acm.org//education/curricula/ComputerScience2008.pdf`

3   Course materials

Textbook

- Andrew S. Tanenbaum. *Modern Operating Systems*. Prentice Hall, third edition, 2008.

Web page

Most course-related information (this syllabus, homework and reading assignments, etc.) will be made available via the Web. The course Web page is a starting point for Web-accessible course material; you can find it linked from my home page (`http://www.cs.trinity.edu/~bmassing`) or directly at `http://www.cs.trinity.edu/~bmassing/Classes/CS3323_2011fall/HTML`.

Other references

There are many books on operating systems and related topics. Here are a few that I find interesting for one reason or another.

- A. M. Lister and R. D. Eager. *Fundamentals of Operating Systems*. Springer Verlag, fifth edition, 1993. Long out of print, but an excellent short book emphasizing basic concepts.
- A. Silberschatz, P. B. Galvin, and G. Gagne. *Operating System Concepts*. John Wiley & Sons, Inc., eighth edition, 2011. Popular textbook, with more detail than Tanenbaum but more difficult to read.
- A. S. Tanenbaum and A. S. Woodhull. *Operating Systems: Design and Implementation*. Prentice Hall, third edition, 2006. A more implementation-oriented treatment, using Tanenbaum's MINIX operating system.
- M. K. McKusick, K. Bostic, M. J. Karels, and J. S. Quarterman. *The Design and Implementation of the 4.4BSD Operating System*. Addison Wesley, 1996. A widely-mentioned classic.
- M. Beck, H. Boehme, M. Dziadzka, and U. Kunitz. *Linux Kernel Internals*. Addison Wesley Longman, second edition, 1998. A detailed discussion of internals, though now rather dated.
- K. M. Chandy and J. Misra. *Parallel Program Design: A Foundation*. Addison Wesley, 1989. A nice mathematical/formal treatment of concurrent algorithms (tangentially relevant to this course).

4   Course requirements

Grading

Grades in this course will be determined by the results of two major exams (a midterm and a final), several in-class quizzes, several homework assignments, and class attendance/participation, weighted as follows.

Component	Maximum points
Midterm exam	100
Final exam	200
Quizzes	50
Homework	about 200
Class participation	20

Numeric grades will be calculated as a simple percentage, by dividing total points earned on the above components by total points possible. These numeric grades will then be converted to letter grades based on a curve, but in no case will the resulting letter grades be worse than students would receive based on the following scheme.

Numeric grade	Letter grade
$90 - 100$	A-/A
$80 - 89$	B-/B/B+
$70 - 79$	C-/C/C+
$60 - 69$	D/D+
$0 - 59$	F

Exams

Exams are comprehensive but will emphasize the most recent material. They are scheduled as follows; please plan accordingly (i.e., avoid scheduling anything else for these times).

- Midterm: October 12, in class.
- Final exam: December 9, noon.

Quizzes

About every other week there will be a short in-class quiz. Dates will be announced via the course Web page. They will usually cover material from recent classes and reading; the questions will be similar in format to those you are likely to see on the major exams. There will be about six quizzes over the course of the semester, and the lowest grade will be dropped.

Homework assignments

Several homework assignments will be required for successful completion of this course. Some will require programming; others will not. Detailed requirements will be provided as part of each assignment; due dates will be announced via the course Web page.

Attendance

Regular class attendance is strongly encouraged; class participation grades will be based largely on attendance.

E-mail

Course-related announcements will sometimes be made by sending e-mail to the Trinity e-mail addresses of all registered students. Students are strongly encouraged to read mail sent to their Trinity addresses frequently.

Late and missed work

Exams can be made up only in cases of documented conflict with a university-sponsored activity, documented medical emergency, or conflict with a religious holiday. Quizzes cannot be made up, but the lowest quiz score will be dropped, so you can miss one quiz without penalty.

    Unless otherwise stated for a particular assignment, homework will be accepted up to one class period late, *but no more*, at a penalty of 10 percent off per working day. This penalty may be

waived or additional time allowed *at the instructor's discretion* in cases of illness or conflict with a university-sponsored activity or religious holiday.

If you have unusual circumstances (as we all sometimes do), please discuss these with me as far in advance as possible.

Academic integrity at Trinity

All students are covered by the Trinity University Honor Code, which prohibits dishonesty in academic work.

The Code asserts that the academic community is based on honesty and trust. It defines specific violations as well as the procedure to determine if a violation has occurred. It also covers the process of hearings for alleged violations and the various sanctions applied for specific violations, and it provides for an appeal process.

The Code is implemented by the Academic Honor Council. Under the Code, a faculty member will (or a student may) report an alleged violation to the Academic Honor Council. It is the task of the Council to collect the pertinent evidence, adjudicate, and assign a sanction within certain guidelines if a violation has been verified.

Students who are under the Honor Code are required to pledge all written work that is submitted for a grade: "On my honor, I have neither given nor received any unauthorized assistance on this work" and their signature. The pledge may be abbreviated "pledged" with a signature. (For electronically submitted work, you should include the text somewhere in what you submit.)

Collaboration and academic integrity in this course

Unless otherwise specified, all work submitted for a grade (homework assignments, quizzes, and exams) must represent the student's own individual effort. Unless otherwise stated, all submitted work will be considered pledged work.

Discussion of homework assignments among students is encouraged, but not to the point where detailed answers are being written collectively. (If you are uncertain about whether a particular level of collaboration is acceptable, please ask for clarification.) Graded papers and sample solutions from previous years (exams and homeworks) are off limits. Answers that are identical beyond coincidence (either to another student's work or to a sample solution from a previous year) will be considered to be in violation of the Honor Code, and *will result in appropriate action*. You are responsible for the security of your work, both electronic and hard copy.