CSCI 4320 (Principles of Operating Systems), Fall 2008 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 (most recently described in Computing Curricula 2001[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.

2 Basic information

Class meeting times and location

- MWF 12:30pm – 1:20pm, HAS 340

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

Scheduled office hours for this semester are as follows.

- Monday 1:30pm – 2:30pm, 3:30pm – 4:30pm
- Tuesday 2pm – 4:30pm
- Wednesday 1:30pm – 4:30pm
- Thursday 2pm – 4:30pm

---

[1] `http://acm.org/education/curric_vols/cc2001.pdf`

These times are subject to change; a current schedule will be available on my Web page and outside my office door.

If I'm not in my office, 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.

Some office hours will be held in one of the classrooms/labs (times to be announced soon). These are "open lab" times, during which I'll be in one of the department's labs, prepared to answer questions. The intent is that students can use these times to work on assignments with someone available to help with any questions or problems.

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.

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/CS4320_2008fall/HTML`.

Other references

There are many books on operating systems and related topics. Here are a few that may be of interest.

- M. Beck, H. Boehme, M. Dziadzka, and U. Kunitz. *Linux Kernel Internals.* Addison Wesley Longman, second edition, 1998.
- 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).
- 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.
- 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. Silberschatz, P. B. Galvin, and G. Gagne. *Operating System Concepts.* John Wiley & Sons, Inc., seventh edition, 2004. 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.

4　Course requirements

Grading

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

Component	Maximum points
Midterm exam	100
Final exam	200
Homework	about 300
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 15, in class.
- Final exam: December 16, 2 pm.

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.

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, and defines specific violations as well as the procedure to determine if a violation has occurred. The Code also covers the process of hearings for alleged violations and the various sanctions applied for specific violations. The Code also 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.

The specifics of the Honor Code, its underlying philosophy, and the norms for sanctioning can all be found on the Academic Honor Council website, accessed through the Trinity Homepage, or directly here[2].

Collaboration and academic integrity in this course

Unless otherwise specified, all work submitted for a grade (homework assignments 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. 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.

---

[2]http://www.trinity.edu/departments/academic_affairs/honor_code/