CS 444: Introduction to Operating Systems

Fall 2018

Instructor: Dr. Ronald Cheung ([cheungr@cs.umb.edu](mailto:cheungr@cs.umb.edu))

Lectures: Tue and Thu 7:00 - 8:15 pm in M-1-207

Office Hours: Tue and Thu 5:30 - 7:00 pm in S-3-073

Telephone: 617- 287 6483 during office hours

**Course Description:**

We will follow the text book closely in covering the following operating system topics:

1. What is an operating system: interface from user level to kernel via system calls; hardware interface underlying kernel; review of interrupts?
2. Process and Threads: process and thread states; system calls for creation; IPC and synchronization; scheduling.
3. Deadlocks: detection and avoidance
4. Memory Management: simple systems; modern paging systems
5. Segmentation
6. Disks and File Systems

In addition to class lectures, 5 homework assignments will be given. These homework assignments will be done by student groups (2 students to a group) using VMs running on their PCs.

**Student Outcomes:**

* demonstrate proficiency in problem solving, software design and development, data structures, algorithms, computer organization and computer architecture (ABET:1a);
* apply this proficiency to larger (mid-sized) systems (such as compilers) (ABET: 1b);
* learn to deal with different operating systems and computer architectures (ABET: 1e)

**Books:**

The course textbook is:

* *Modern Operating Systems,* 4th edition, Andrew Tanenbaum, Prentice Hall, 2015.[ISBN 0-13-359162-X]

A good reference book on C is:

* *The C Programming Language*, 2nd edition, Kernighan and Ritchie, Prentice Hall, 1988. [ISBN 0-13-110362-8]

**Attendance:**

I’ll take attendance up till the Add/Drop deadline. This allows me to establish a true class list and gets me to know you a little better. After that period, I’ll not take attendance. If you miss a class, it is your responsibility to find out what has been covered.

**Grading:**

Grades will be determined by averaging:

Midterm Exam: 100 points Final Exam: 100 points 5 Homework assignments: 100 points total

No late homework will be accepted. I will scale the scores before determining the final grade for the class.

**Incompletes:**

I do not give incompletes. If you have a serious issue, please come and see me.

**Student Conduct:**

Students are required to adhere to the University Policy on Academic Standards and Cheating, to the University Statement on Plagiarism and the Documentation of Written Work, and to the Code of Student Conduct which is available online at: <http://www.umb.edu/life_on_campus/policies/community/code>.

Accommodations for Disabilities:

Section 504 of the Americans with Disabilities Act of 1990 offers guidelines for curriculum modifications and adaptations for students with documented disabilities. If applicable, students may obtain adaptation recommendations from the Ross Center for Disability Services, M-1-401, (617-287-7430). The student must present these recommendations and discuss them with each professor within a reasonable period, preferably by the end of Drop/Add period.