CSCI 320 Operating Systems

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Operating Systems
CSCI 320-01

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Office hours/Personal Schedule: http://www.cs.xu.edu/~mikeyg/schedule14s.html

Course Home Page: http://www.cs.xu.edu/csci320/14f

Schedule: Lectures are Mondays, Wednesdays, and Fridays 10:00-10:50 in Cintas 201.

Required Texts:
- Silberschatz, Galvin and Gagne, Operating System Concepts, 9/e, Wiley. Available as a free eBook through the XU Library (Safari Online).
- Stephenson, In the Beginning was the Command Line, 1999. Available from many different sources, including http://www.cryptonomicon.com/beginning.html
- Goldweber and Davoli, μMPS2 Principles of Operation.
- Goldweber and Davoli, Student Guide to the Kaya Operating System Project; v1.2.

The μMPS2 and Kaya manuals are available at: http://stores.lulu.com/VirtualSquareLab. Additional readings as assigned.

Other Required Materials: A willingness to work hard and time; lots of time.

Prerequisites: Senior status, CSCI 210 (Machine Organization), and CSCI 220 (Data Structures and Algorithms). CSCI 260 (Software Engineering) is highly recommended.

Course Objectives: To study from both a theoretical and a practical viewpoint the design and implementation of operating systems; i.e. “Learning how to share.”

Required Work: This is a major project course. The majority of your time and effort will be towards the creation of an operating system written in C.

There may be a few additional paper and pencil assignments, though they will only be assigned during the down time between OS “phases.” Additionally, there will be two required midterm examinations.
The operating systems coding will be done in teams of two; all other work will be done individually. It is possible that your team may complete the writing of the target OS. Sometimes teams get there, and sometimes they don’t.

**Exams:** There will be two non-cumulative midterm exams. Each will be scheduled with at least one week advance lead time. The cumulative final exam is scheduled for Wednesday December 17, 10:00-11:50. The final examination is waived in lieu of successful completion of Phase 3 of the OS project. Phase 3 project code will be accepted up to the midnight on the last day of finals (Friday December 19, 2014). Use these dates to make your travel plans accordingly.

**Attendance and Classroom Participation:** While there is no formal attendance policy, you are expected to arrive prepared to ALL course sessions. Furthermore you are expected to participate in the classroom discussions and activities to the best of your abilities. Given the difficult nature of the material and the interactive lecturing approach that will be used, it is difficult to envision a student missing and/or arriving unprepared to a number of the class sessions and still succeed in the course.

**Grading:** Grades on all assigned work and exams will be based on correctness, clarity and style. Your grade will be based on the following
- Paper and pencil assignments along with the occasional quiz and the instructor assessment of your classroom participation will contribute 5%.
- Operating systems implementation assignments will contribute 75%. (20%, 25%, and 30% respectively.)
- Each midterm examinations will contribute 10%.

Each programming assignment (OS implementation) will be evaluated during a one-on-pair session with the instructor. It is the students’ responsibility to schedule these sessions.

The Department of Computer Science and Mathematics has adopted the following grading standards:
- A: Exceptional. The student’s attainments are out of the normal course, unusual and special.
- B: Good. The student’s performance is done rightfully or skillfully and is commendable.
- C: Satisfactory. The student’s accomplishments are sufficient for the needs of the course.
- D: Minimal passing.
- F: Failure.

A more detailed explanation can be found at:
Also see http://www.cs.xu.edu/~mikeyg/CourseEngagementStandards.html for a description of the “Course Engagement Standards.”

**Exceptions to the Rules:** Almost all rules are designed to be broken under the correct set of extraordinary
circumstances. It is strongly recommended that you communicate to the instructor at the earliest possible
time any circumstances you feel warrant an exception (e.g. illness, religious holiday, personal and/or family
crisis, etc.). Remember that going into hiding is probably the worst strategy you can adopt! There is a direct
relationship between the amount of sympathy you can anticipate from an instructor and the amount of time
remaining until a given assignment’s due-date. Finally, remember that if you are uncomfortable discussing
something directly with an instructor (e.g. personal problems) you can always contact someone in the Dean
of Students Office and have that individual contact the instructor.

**Honor Code:** Homework can be challenging – it’s where you find out what confuses you. You are strongly
encouraged to discuss the homework with your classmates or with the instructor (and where appropriate, the
math tutoring lab). In the end though, all work submitted must be your own. You must work out, write up,
create, or program your own solutions. Work you hand in must be conceived, created, and fully understood
by you.

The best way to ensure this is to craft your solutions/answers/programs when you are by yourself rather than
during your discussions with others. This will insure that your work is based on your own understanding
rather than on that of your classmates. To do otherwise is a violation of the college’s policy on academic
honesty and will be handled accordingly. Please refer to the rules described in the Student Handbook.

I encourage you to follow these two guidelines, stated on many course websites, but perhaps originating
most recently at Duke University.

- **The Gilligan's Island Rule:** Essentially, the idea is that when you meet to discuss problems, it is fine
to have a communal board or paper to work out your ideas, but this record should be destroyed at the
end of the session. Then, everyone should spend at least thirty minutes doing a relatively mindless
task (like watching reruns of a brainless show – e.g. Gilligan’s Island). This rule helps everyone be
sure that the work they create truly represents their understanding of the material.

- **List of Collaborators:** If you discussed the problems with others, include their names in your writeup,
either at the beginning or end of the problem, or in a section specifically designated as the list of
collaborators. (If you have the same collaborators on all problems, a single listing is fine. If it varies
by problem, list on a problem-by-problem basis.)

Remember, un-noted collaboration or any form of cheating will be dealt with harshly to protect the integrity
of everyone involved.

Always remember:

**Don’t Panic**