COMP 7212: Operating / Distributed Systems Fall 2020

Syllabus

Instructor: Andrew Neel (aneel@memphis.edu)
Office hours: By Appointment only (Please arrange by email 2-3 days in advance)
Location: Dunn Hall Room 119
Time: Tue/Thur 7PM-8:30PM
Date: Term: Aug 17 – Nov 17
Last Day: April 29th
Final Exam: Tue, Nov 24th @ 7:00PM
Holidays: Labor Day: Sept 7th
Study Day: None
by Andrew S. Tanenbaum and Maarten Van Steen
ISBN: 978-0132392273
The 3rd Edition of this text is acceptable

Course Description
Overview of operating system architecture for centralized and distributed systems; storage device and file systems; process management, scheduling, synchronization, interprocess communications and security; case studies of selected operating systems. PREREQUISITES: COMP 2150 and 3410 or permission of instructor.

Professional Conduct
Students are expected to conduct themselves in a professional manner. Each student will further be held accountable to The University of Memphis’s code of conduct.

Classroom Expectations
I expect each student to appear in class prepared to discuss the topics of this course. Appropriate preparation includes but is not limited to reading the text, and reviewing recommended online materials, review of source code when needed. I further expect that each student will participate in classroom discussions.

All students are required to wear their face masks while on campus an in accordance with the University Policy. As the University Policy evolves to handle the current state of the pandemic, this requirement will change.

Second, many of you are no doubt interested in how this class will be taught in the fall. My plan is to teach this class as I normally would in the form of lectures. Students will be divided up into two groups. Group one will attend the first session of the week in-person/on-campus and attend via zoom in the second session. Group two will attend the first session via zoom and attend the second session of the week in-person/on-campus. I will post group assignments as we get closer to the start of the semester.

In addition, every person from group one will be paired with a person in group two. I am well aware that zoom is not always as conducive to learning as in person instruction. I believe this partnership will help compensate.
Grading:

Mastery of this course’s material will be evaluated as follows:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Three (3) exams</td>
<td>60%</td>
</tr>
<tr>
<td>Class project</td>
<td>20%</td>
</tr>
<tr>
<td>Homework (Programming Assignments, Current research review, etc.)</td>
<td>20%</td>
</tr>
</tbody>
</table>

NOTE: I require all students to bring one blue exam booklet for themselves on exam day.

Limited Collaboration Policy:

Students are permitted and encouraged (but not required) to discuss the ideas and concepts of any classroom topic or assignment. Unless otherwise specified, the product of each assignment and test is expected to be sole, individual work each student. Specifically, students can discuss ideas and concepts; but one student is not permitted to write code or prose for another student. All help is expected to be documented and credited appropriately.

Warning 1: Each student should accept help with care. It is very easy to mislead yourself into believing that you understand a concept when others are providing aid or assisting. In a crunch (such as an exam), this error can prove fatal.

Warning 2: Please give help with care. Collaboration is intended to improve the classes understanding of a concept. If too much help is given, students may be enabled to fail!

Plagiarism or cheating behavior in any form is unethical and detrimental to proper education and will not be tolerated. All work submitted by a student (projects, programming assignments, lab assignments, quizzes, tests, etc.) is expected to be a student's own original work. The plagiarism is incurred when any part of anybody else's work is passed as your own (no proper credit is listed to the sources in your own work) so the reader is led to believe it is therefore your own effort. Students are allowed and encouraged to discuss with each other and look up resources in the literature (including the internet) on their assignments, but appropriate references must be included for the materials consulted, and appropriate citations made when the material is taken verbatim.

If plagiarism or cheating occurs, the student will receive a failing grade on the assignment and (at the instructor’s discretion) a failing grade in the course. The course instructor may also decide to forward the incident to the University Office of Student Conduct for further disciplinary action. For further information on U of M code of student conduct and academic discipline procedures, refer to: [http://www.memphis.edu/studentconduct/academic-misconduct/process.php](http://www.memphis.edu/studentconduct/academic-misconduct/process.php)
Course Outline:

1. Introduction
2. Architectures
3. Processes
4. Communication
5. Naming
6. Synchronization
7. Consistency and Replication
8. Fault Tolerance
9. Security

Other topics may include:

a. Distributed Web Based Systems
b. Distributed Document-Based Systems
c. Distributed Coordination-Based Systems
d. Distributed Object Based Systems
e. Distributed File Systems