COMP 7212 Operating/Distributed Systems (3 cr) – Spring 2024
University of Memphis
MW 2:20PM – 3:45PM

Instructor:
Dr. Myounggyu Won Office: Dunn Hall 398
Email: mwon@memphis.edu
Phone: 901-678-2792
Office Hours: By appointment

TAs: Lokesh Das (ldas@memphis.edu)

Catalog Course Description: Overview of operating system architecture for centralized and distributed systems; storage device and file systems; process management, scheduling, synchronization, inter-process communications and security; case studies of selected operating systems.

Prerequisite(s): COMP 2150 and 3410 or permission of instructor.

Required Textbook(s): *Distributed Systems: Principles and Paradigms (3rd Edition)* by Andrew S. Tanenbaum and Maarten Van Steen ISBN: 978-0132392273

Course Policy:

Attendance: It is crucial that you attend class regularly. You are responsible for all material covered during lectures. In-class exercises and quizzes will be given throughout the semester to assess your understanding of the lecture materials.

Evaluation: consists of two in-class exams worth 100 points each, a final exam worth 150 points, 15 quizzes/in-class exercises worth 10 points each, and research paper presentations worth 100 points. Out of class homework assignments worth 300 points will be assigned during the semester. These will be a combination of 3 written assignments and 4 programming projects.

Assignments: Late assignments will be penalized 20% after the due date and are due at 11:59PM on the due date. If you have not completed your assignment by the due date, you should submit the work you have done for partial credit. No work will be accepted once the graded work has been returned or the solution has been disclosed to the class, except for unusual circumstances which the instructor feels reasonable. Note that any kind of hardware or software failure or machine unavailability in the lab does not merit an extension on the assignment.

Exams: Exams must be taken on the hour they are scheduled. In the event, if you cannot attend the class to take the exam due to some emergency or some unavoidable situation (such as serious illness, death in the family, participation in university sports, religious observations, and so on) you must notify me as soon as possible before the exam and also you must validate your absence by providing me a document (e.g., with a letter from your doctor).

Chitchatting: Students are **strictly prohibited from engaging in chitchat during class** under any circumstances. Should a student receive a warning from the instructor for such behavior, a penalty of ten points will automatically be deducted from their total score.

Paper Presentation: A presentation schedule will be determined by the instructor (in an alphabetical order of last name). **Students are not allowed to change the presentation schedule**. **If a student fails to present a paper on the scheduled date, they will automatically receive a zero.** A total of 100 points are allocated to presentation itself.

A student's presentation must include the following minimum content. Additional details may be incorporated at the student's discretion, provided the presentation does not exceed the 30-minute time limit.

- Introduction (1 slide)

    - What is the problem?
    - Why is the problem important?
    - What is the key idea to solve the problem?
    - Why is the problem hard? (i.e., what are the challenges addressed in the paper)
- Related Work (1 slides)
    - Discuss two related papers including the main idea and limitation compared to the paper you are presenting.
- Proposed Approach/Ideas (5+ slides)
    - Overview (before presenting the details, show us the big picture of the proposed idea).
    - And then, the details.
- Experimental Results (2~3 slides)
    - No need to present all results.
    - Choose two to three graphs/tables that represent the key results.
- Conclusion (1 slide)

Plagiarism/Cheating Policy: 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 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 Judicial Affairs Office for further disciplinary action. For further information on U of M code of student conduct and academic discipline procedures, please refer to: http://www.people.memphis.edu/~jaffairs/

Expected Performance Criteria:

Assessment Tools: Written assignments, Programming projects, quizzes/exercises (attendance and participation), exams, research paper presentations.

Programming Projects (3)	200
Written Assignments (3)	100
Quiz/In-Class Exercises (15) (Attendance and Participation)	150
Paper Presentations	100
Midterm 1	100
Midterm 2	100
Final Exam	150
Total Points	900

A+: >= 97.5%, A: >= 92.5%, A-: >= 90%
B+: >= 85%, B: >= 82.5%, B-: >= 80%
C+: >= 75%, C: >= 72.5%, C-: >= 70%
D+: >= 65%, D: >= 62.5%
F: < 62.5%

Tentative Course Schedule:

Week	TOPIC
Week 1	Course Overview Chapter 1: Introduction
Week 2	Chapter 2: Architectures

Week 3	Chapter 2: Architectures Chapter 3: Processes
Week 4	Chapter 3: Processes Paper Presentations
Week 5	Chapter 4: Communication Paper presentations
Week 6	**Midterm 1** Chapter 4: Communication
Week 7	Chapter 5: Naming Paper presentations
Week 7	Chapter 5: Naming
Week 8	Chapter 6: Coordination Paper Presentations
Week 9:	Chapter 6: Coordination Paper Presentations
Week 10:	**Midterm 2** Chapter 7: Consistency and Replication
Week 10:	Chapter 7: Consistency and Replication Paper Presentations
Week 11	Chapter 8: Fault Tolerance Paper Presentations
Week 12	Paper Presentations
Week 12	Chapter 8: Fault Tolerance Paper Presentations
	Final