Arab Academy for Science, Technology, and Maritime Transport

College of Computing and Information Technology

CS425   Distributed Systems

Fall 2023 (Sunday 10:30 AM)
3 Credit Hours

Instructor: Prof. Dr. Ayman Abdel-Hamid
Office: College of Computing and Information Technology
E-mail: hamid AT aast DOT edu
Office hours: by appointment
Slides:
https://drive.google.com/file/d/13lyl3sMZMatY3V7ciBgmvVFY3rP4_Iv3/view?usp=drive_link

Required Text
George Coulouris, Jean Dollimore, Tim Kindberg, and Gordon Blair, *Distributed Systems: Concepts and Design*, 5th Edition, Pearson, 2012

Recommended References
Maarteen van Steen and Andrew S. Tanenbaum, *Distributed Systems*, 3rd Edition, distributed-systems.net, 2017
(https://www.distributed-systems.net/index.php/books/ds3/)

Course Objectives
The course is an introduction to the main concepts and paradigms of distributed systems. We shall explore aspects of designing, implementing, and evaluating distributed systems. A number of programming assignments will provide hands-on experience in implementing distributed systems.

Course Workload

One lecture is scheduled per week.

Course material will be introduced in lectures. Exams, which test your acquired knowledge, will be scheduled during lecture time unless otherwise stated. Furthermore, exercises/questions will be assigned as homework in tutorial sessions. Some programming assignments are planned as part of the practical aspect of the course.

Topics

Tentatively, the topics that will be covered include:

- Ch1: Characterization of distributed systems
- Ch2: System Models
- Ch4: Interprocess Communication
- Ch5: Remote Invocation
- Ch6: Indirect Communication
- Ch7:OS Support
- Ch8: Distributed Objects and Components
- Ch12: Distributed File Systems
- Ch14: Time and Global States
- Ch18: Replication
- Ch21: Designing Distributed Systems: Google Case Study

Grading

7th week	7th week exam + quizzes +assignments (30)
12th week	12th week exam +assignments (20)
Semester Work (attendance, homework, assignments, quizzes, etc.)	10
Comprehensive Final Exam	40

The instructor reserves the right to change the grading scheme or add assignments/projects/exams.

Policies
- Attendance is crucial to your success in this course. You have the responsibility to cover any missed material.
- Missed exams cannot be made up, without proper documentation.

Academic Honesty
The honor code applies to all homework/assignments and examinations. The instructor's academic honesty policy is very strict; instances of academic dishonesty will be severely penalized. *All work submitted must be the student's own work!* It is unprofessional and dishonest to submit someone else's work as your own.