



Computer Science Department  
**Course Syllabus**  
**CS437 - Distributed Systems**

**Catalog Description:** This course aims to expose students to the complexities involved in designing and building distributed applications. To gain an in-depth understanding of the principle paradigms used in the area. To gain an appreciation of the open research issues in the area. Main themes: Paradigms of distributed computing including message passing; remote procedure call; remote method invocation; client server computing; shared file systems; distributed objects; time and global states; coordination and agreement; Distributed algorithms and parallel computing; and replication and fault tolerance.

**Credit Hours:** **3 Credit hours:** 3 Lectures per week 0 Labs. per week 0 Recitation per week

**Prerequisites:** CS330

**Course Learning Outcomes:**

1. Explain what a distributed system is, why one would design a system as a distributed system, and what the desired properties of such systems are.
2. List the principles underlying the functioning of distributed systems, describe the problems and challenges associated with these principles, and evaluate the effectiveness and shortcomings of their solutions.
3. Explain how the principles are applied in contemporary distributed systems, explain how they affect the software design, and be able to identify features and design decisions that may cause problems.
4. Describe how to design a distributed system that fulfils requirements with regards to key distributed systems properties (such as scalability, transparency, etc.), be able to recognize when this is not possible, and explain why.

**Major Topics:**

- Characterization of Distributed Systems
- System Models
- Inter-process Communication
- Distributed Objects and Remote Invocation
- Operating System Support
- Peer To Peer Systems
- Web Services
- Coordination and Agreement

**Text Books:**

- Required: "Distributed Systems: Concepts and Design" by G. Coulouris, J. Dollimore and T. Kindberg – fifth edition-2011.
- Optional: "Distributed Systems: Principles and Paradigms", Tanenbaum and Steen, 2nd edition, Prentice Hall, 2006.



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**Grading:**

- ⦿ The grading scale for this course is:
  - . 95 - 100 A+ Passing
  - . 90 - 94 A Passing
  - . 85 - 89 B+ Passing
  - . 80 - 84 B Passing
  - . 75 - 79 C+ Passing
  - . 70 - 74 C Passing
  - . 65 - 69 D+ Passing
  - . 60 - 64 D Passing
  - . 0 - 59 F Failing
  
- ⦿ Final grades will be determined based on the following components:
  - . 60% Semester Work
  - . 40% Final Exam
  
- ⦿ Students may not do any additional work for extra credit nor resubmit any graded activity to raise a final grade.
  
- ⦿ Late submissions will not be accepted for any graded activity for any reason.
  
- ⦿ Students have one week to request the re-grading of any semester work.

**Attendance Policy:**

Students should attend 80% of the overall course hours taught in the semester as per the University regulations.

If a student fails to achieve this portion, he/she shall not be allowed to appear in the final exam and shall be awarded “DN” grade and repeat the course.

**Cheating and  
Plagiarism  
Policy:**

The instructor will use several manual and automated means to detect cheating and/or plagiarism in any work submitted by students for this course.

When a student is suspected of cheating or plagiarism, the instructor raises the issue to the disciplinary committee.



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**Communications:** Registered students will be given access to a section of the Blackboard Learning System for this course. Bb will be used as the primary mechanism to disseminate course information, including announcements, lecture slides, assignments, and grades.

Communication with the instructor on issues relating to the individual student should be conducted using CIS email, via telephone, or in person.