



Computer Science Department

Course Syllabus

CS430 - Mobile Networks

Catalog Description: This course will examine techniques used to support mobility and multiple access methods in wireless networks. Multiple access methods such as FDMA, TDMA, CDMA, OFDMA, and CSMA/CA will be detailed. Mobility Management techniques including handover and roaming will be also covered. Network planning and security issues will be discussed. These different techniques will be illustrated by showing their usage in the most relevant networks, namely Wireless Local Area Networks, Wireless Metropolitan Area Networks, Cellular Networks, and Mobile IP Networks.

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

Prerequisites: CS330

Course Learning Outcomes:

1. A first objective of this course is to provide a deep understanding of the techniques used to support mobility in wireless networks:
 - a. Multiple access,
 - b. Mobility management (handover, roaming)
 - c. Security
 - d. Network planning.
2. A second objective is to illustrate these techniques by showing their usage in the most relevant networks:
 - a. Wireless local area networks,
 - b. Wireless metropolitan area networks,
 - c. Cellular networks,
 - d. Mobile IP networks

Major Topics:

- Introduction
- Wireless Local Area Networks
- Wireless Metropolitan Area Networks
- Mobile IP
- Cellular Networks

Text Books:

Required: • Mobile Communications, Jochen H. Schiller, 2nd edition, Addison-Wesley, 2003, ISBN-10: 0321123816, ISBN-13: 9780321123817.

• Optional: Mobile IP: Design Principles and Practices, Charles E. Perkins, 1st edition, Prentice-Hall, 1997, ISBN-10: 0201634694, ISBN-13: 978-0201634693.

• Optional: 4G: LTE/LTE-Advanced for Mobile Broadband, Erik Dahlman, Stefan Parkvall, and Johan Skold, 1st edition, Elsevier, 2011, ISBN-0: 012385489X, ISBN-13: 978-0123854896.



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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.