

# CSP 545: Wireless Networking Technologies and Applications

## Texts

- Yi-Bing Lin, Imrich Chlamtac, *Wireless and Mobile Network Architectures*.
- Reference: Theodore S. Rappaport, Theodore Rappaport, *Wireless Communications: Principles and Practices*, 2nd edition.

## Objectives

- This course will present the foundation of wireless technologies and examine state-of-the-art wireless systems and services, including digital cellular systems (DCS), wireless asynchronous transfer mode (ATM), infrared data transfer (IrDA), wireless local area network technologies including 802.11b (wireless Ethernet) and Bluetooth, and third-generation (3G) systems such as wireless code division multiple access (W-CDMA) and cdma2000.
- Security for wireless systems including encryption and authentication issues will also be addressed (such as WAP - Wireless Access Protocol).

## Prerequisites

- CS 542.

## Syllabus

• Introduction: Wireless communication systems and services; Brief overview of modern wireless communication systems.	2 hours
• The Physics of Wireless Communication (Propagation; Spectrum, coding, and modulation; Antennas)	4 hours
• Cellular Wireless Systems	4 hours
• Multiple Access Techniques for Wireless Systems (FDMA, TDMA, CDMA)	4 hours
• GSM	4 hours
• Wireless Code Division Multiple Access (W-CDMA)	4 hours
• CDMA2000	4 hours
• General Packet Radio Services (GPRS)	4 hours
• 802.11	4 hours
• Bluetooth	4 hours
• Digital Cellular Systems (DCS), Wireless Asynchronous Transfer Mode (ATM), and Infrared Data Transfer (IrDA)	4 hours
• Security for Wireless Systems (including encryption and authentication, using (e.g.) Wireless Access Protocol [WAP])	3 hours
Total	45 hours

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