The University of Texas at Tyler
Department of Electrical Engineering

EENG 5301: Wireless Communications and Networks

Syllabus

Catalog Description:

Introduction to Wireless Communications and Networks: transmission fundamentals, LANs, MANs, WANs, switching, ATM, TCP/IP; Wireless Communications: antennas, propagation, signal encoding, spread spectrum, error control; Wireless Networking: satellite communications, cellular networks, analog, TDMA, CDMA, cordless systems, wireless local loop, mobile IP, WAP; Wireless LANS: infrared, spread spectrum, microwave, IEEE 802.11, Bluetooth. Prerequisite: EENG 4312 or CI.

Prerequisites: Communications Theory

Credits: 3 (3 hours lecture, 0 hours laboratory per week)

Text(s): Stallings, **Wireless Communications and Networks,** Prentice Hall, 2002

Additional Material: MATLAB

Course Coordinator: Hector A. Ochoa, Assistant Professor

Topics Covered: (paragraph of topics separated by semicolons)

Communication Fundamentals: transmission, communication networks, protocols and the TCP/IP suite; **Wireless Communication Technology**: antennas and propagation, signal encoding techniques, spread spectrum, coding and error control; Wireless Networking: satellite communications, cellular wireless networks, cordless systems and the wireless local loop, Mobile IP and Wireless Access Protocol; **Wireless LANs**: wireless LAN technology, IEEE 802.11 wireless LAN standard, Bluetooth; additional special topics pertaining to wireless communication and networks.

Evaluation Methods: (only items in dark print apply):

1. Examinations / Quizzes
2. Homework
3. Report
4. Computer Programming
5. Project
6. Presentation
7. Course Participation
8. Peer Review

Course Objectives[1]: By the end of this course students will be able to:

1. Discuss communication fundamental this include: transmission, communication networks and protocols [1,2,3,5]
2. Describe and simulate the different types of wireless communications technologies and its applications [1,2,3,5]

3. Identify the different wireless networking: principles, technologies and standards [1,2]
4. Apply the concepts of wireless communications and networks to real life scenarios. [3,5]

[1]*Numbers in brackets refer to method(s) used to evaluate the course objective.*

Relationship to Program Outcomes[2]: This course supports the following Electrical Engineering Program Outcomes, which state that our students will:

1. Graduates of the program will possess a breadth and depth of knowledge in electrical and computer engineering. [1,2,3,4]
2. Graduates of the program will possess and demonstrate oral and written communication skills. [1,2,3,4]
3. Graduates of the program will demonstrate the capability to perform independent learning and investigation.[1,2,3,4]

[2]*Numbers in brackets refer to course objective(s) that address the Program Outcome.*

Prepared By:	Mark Humphries, Adjunct Professor	Date:	25 August 2007
Modified By:	Hector A. Ochoa, Assistant Professor		3 June 2009