

EEL 6591 Wireless Networks

Summer 2005

Course Description

In this course, we will discuss basic concepts and recent advances in the field of wireless communication networks. The course begins with an introduction of the fundamentals of wireless communication technology and continues with a discussion of selected topics for the following representative network types: cellular wireless networks, WLANs, ad hoc wireless networks, and wireless sensor networks.

Note: This course can be counted as a course in group3-*Computer Systems* for MS degree in CS and in group3-*Computer Communications & Multimedia* for MS degree in CE.

Textbook

"*Wireless Communications and Networks 2/E*", by William Stallings, Prentice Hall Publishing Company, 2004.

- This text is also available as a web book for 50% the price of the print version at www.safarix.com. The ISBN for the web book is 0-13-186316-9.
- The print version can be purchased at the FAU bookstore or online at www.prenhall.com. The ISBN of the print version is 0-13-191835-4.

Instructor

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Goals

Understanding the fundamentals in wireless communication technology as well as basic features and recent advances in various wireless networks.

Studio Time: MWF 9:45 – 11:50 AM

Prerequisites

- Basic knowledge of computer communication networks.

Tentative Topics

1. Introduction
2. NS2 Network Simulator
3. Technical Background: Transmission Fundamentals, Communication Networks, Protocols and the TCP/IP Suite
4. Wireless Communication Technology: Antennas and Propagation, Signal Encoding Techniques, Spread Spectrum, Coding and Error Control
5. Cellular Wireless Networks
6. WLANs
7. Ad Hoc Wireless Networks

- 8. Wireless Sensor Networks
- 9. Other Topics

Tentative Evaluation

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| 2 or 3 Assignments | 30% |
| Final Exam | 45% |
| Project (simulation with <i>ns-2</i>) OR Survey Paper | 25% |

Lecture notes and all other references will be made available on *Blackboard*.