

EE 447 Mobile Wireless Communications - Fall 2010

Instructor: Dr. Richard S. Wolff, 509 Cobleigh Hall
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Prerequisites: EE445 Telecommunications Systems or equivalent, or consent of the instructor

Description: This course will provide the student an introduction to the engineering principles necessary to design and analyze modern wireless communication systems. Properties of the wireless communications channel and propagation models will be examined for different radio environments. The elements of a wireless communication system and link budget analysis are introduced. Modern modulation techniques for wireless such as QAM, OFDM, and Spread Spectrum are presented. Cellular concepts of channel reuse, clusters, capacity, mobility management and overall system architecture are presented with examples of current and next generation cellular systems. Multiple access techniques such as FDMA, TDMA, and CDMA for wireless systems are presented. The semester will conclude with a look at wireless LANs and future wireless systems.
Students may use OPNET and Matlab to build models and explore problems.

Text: Black, "Introduction to Wireless Systems", First Edition, Prentice Hall/Pearson Education, ISBN:0-13-224789-4

Class handouts will be used to supplement the text.

Supplemental References (not required):

"Antennas and Propagation for Wireless Communications Systems", Simon R. Saunders
"Wireless Communications: Principles and Practice", Theodore s. Rappaport
"Modern Wireless Communications", Simon Haykin
"Mobile Wireless Communications", Mischa Schwartz
"Contemporary Communication Systems using Matlab", Jon Proakis

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Grading:	Homework (approx 6 sets)	25%
	Midterm (2)	50%
	Final Exam	25%