EE 710
Wireless Communications

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Wireless communications is one of the most vibrant segments of the communications industry. The growing demand for mobile Internet and wireless multimedia applications has motivated the development of broadband wireless multiple access technologies. Supporting applications such as multimedia Internet supported cell phones, wireless sensor networks, and video teleconferencing presents significant technical challenges.

This course will cover advanced topics in physical layer wireless communication theory and their implementation in wireless systems. Topics include modeling of the wireless channel, performance of digital modulation over wireless channels, coding and adaptive modulation, multiple antennas and space-time communications, orthogonal frequency division modulation (OFDM), multiple input multiple output (MIMO) techniques, and multiple access technologies. Concepts will be illustrated with examples from current and emerging standards and systems.

Prerequisite knowledge of digital communications (e.g. EE 504 or EE 642) and probability theory (e.g. EE 500) is expected.