



Wireless Communication Theory

ECE 7003

Credit Hours:

3.00 - 3.00

Course Levels:

Graduate (5000-8000 level)

Course Components:

Lecture

Course Description:

Theory and analysis of wireless communication systems. Topics include: multipath fading channels; modulation, equalization, and coding for fading channels; MIMO systems; capacity calculations.

Prerequisites and Co-requisites:

Prereq: 6001 (804).

Course Goals / Objectives:

- Develop mathematical theory and engineering practice of digital communications over fading channels
 - Learn channel modeling techniques for fading channels
 - Learn modulation and equalization techniques for mobile radios
 - Learn analysis and design of multi-channel techniques for communication over fading channels
 - Learn methods and interpretation of capacity calculations
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Course Topics:

- Wireless communication systems
 - Wireless channel modeling
 - Capacity and fundamental limits
 - Modulation, equalization and coding techniques for wireless communications
 - Multi-access, broadcast, and interference management
 - MIMO Systems
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Designation:

Elective