EE 555 – Wireless and Mobile Networks

Spring 2024

Course Objective: This course covers fundamentals, principles as well as evolving research on wireless networks. Emphasis will be on the networking aspects (layer 2 and up), with examples from state-of-the-art wireless technologies and systems such as wireless mesh networks, wireless sensor networks, LTE, WiFi, 5G and Beyond.

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Class Hours: Mondays 12:40 – 14:30 (FMAN G062)  
Wednesdays 11:40 – 12:30 (FASS 1080)

Course Text:  
Wireless Communications and Networking, Vijay Garg, Morgan Kaufmann, 2010

Wireless Communications and Networking, William Stallings, Prentice Hall, 2005


We will also be reading journal articles on relevant topics.

Grading:  
Midterm 25%  
Final 35%  
Homeworks 15%  
Project 25%

Topics to be covered:

Week 1: Overview of Wireless Systems/Networks
Weeks 3-4: Wireless Multiple Access Techniques
Weeks 5-6: Principles of Cellular Design
Weeks 7-9: Wide Area Wireless Networks  
Planning and Design of Wide Area Wireless Networks  
Mobility Management in Wireless Networks
Weeks 10-11: Wireless Local Area Networks: WiFi Technology and Enhancements
Weeks 13-14: 5G and Beyond