CmpE 567 –Broadband Wireless Networks – Spring 2020

Objectives & Description: This course aims to introduce concepts and research topics in emerging wireless broadband networks. In the first part of the course, the wireless medium and its features will be explained in detail. Next, we will cover wireless networks ranging from WLANs to WiMAX, Cognitive Radio with the emphasis on mobility, Quality of Service (QoS), and seamless operation. Most of the course will focus on Cognitive Radio Networks. We will also learn how such networks can be analytically modeled.

Instructor: Assist. Prof. H. Birkan YILMAZ (**Room**: 38, birkan.yilmaz@boun.edu.tr)

Class Hours/Rooms: TTT 678 / BM B5

Reference books:
"Wireless Communications, Principles and Practice," **Rappaport, 2nd Edition, Prentice Hall, 2012.**
"802.11 Wireless Networks: The Definitive Guide," **Gast, 2nd Edition, O'Reilly Media.**
"Wireless Network Performance Handbook" **Clint Smith and Curt Gervelis, McGraw Hill.**
"OFDM-based Broadband Wireless Networks: Design and Optimization," **Hui Liu and Guoqing Li, Wiley Interscience.**
"WirelessMAN: Inside the 802.16 Standard for Wireless Metropolitan Area Network," **Eklund, IEEE Press.**
"Wireless Communications and Networks," **Stallings, Prentice Hall.**

Tentative Outline:

Week 1: Wireless Technologies & Wireless Medium
Week 2: Modulation and Interference
Week 3*: Wireless LANs, Part 1
Week 4: Wireless LANs, Part 2
Week 5*: Wireless LANs, Part 3 & Wireless PAN
Week 6: Wireless MANs, Part 1
Week 7: Wireless MANs, Part 2
Week 8: Midterm Exam
Week 9: Cognitive Radio, Part 1
Week 10: Cognitive Radio, Part 2
Week 11*: Cognitive Radio, Part 3
Week 12: Cognitive Radio, Part 4
Week 13: Wireless WANs

Attendance: No Attendance will be taken during the course.

Grading:
15% 3 Quizzes (Quizzes will take place on the 3rd , 5th , and 11th weeks)
20% Projects
30% Midterm*
35% Final