

# **EEL 6591: Wireless Networks**

## *Spring 2017*

Instructor: Professor Yuguang “Michael” Fang

Contact: 435 Engineering Building, (352) 846-3043, fang@ece.ufl.edu

**Prerequisites:** EEL 5718: Computer Communications.

**Textbook:** *Wireless Communications: Principle and Practice* by Theodore Rappaport, Second Edition, Prentice-Hall, 2002.

**References:** **1.** *Broadband Wireless Multimedia Networks* by Benny Bing, John Wiley, 2013. **2.** *Wireless and Mobile Network Architecture* by Yi-Bing Lin and Imrich Chlamtac, John Wiley & Sons, 2000. **3.** Technical Papers.

### **Topics include:**

1. Overview of wireless communication networks and protocols
2. The cellular concept: system design fundamentals
3. Wireless physical layer fundamentals
4. Data link control protocols
5. Wireless medium access control (MAC) protocols
6. Radio resource management (power control)
7. Resource allocation and Call admission control
8. Mobility management
9. Wireless networking (routing/rerouting, wireless TCP/IP)
10. Revolution/evolution towards future generation wireless networks (4G/5G/LTE-U)
11. Selected topics: wireless mesh networks, mobile ad hoc networks, wireless sensor networks, RFID, Vehicle Networks, Internet of Things (IoT), cognitive radio networks
12. Wireless security (if time allows)

**Grading:** Homework-10%, Two exams-70%, and Project-20%. Project: project description is given on the webpage <http://www.fang.ece.ufl.edu/eel6591/project.html>.

**Academic honesty statement:** All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a student at the University of Florida and to be honest in all work submitted and exams taken in this class and all others.