EE 470

1. **Course Number & Name:** EE 470, Introduction to Internet of Things

2. **Course Credit and Contact Hours:** 3 Units, 3 hours lecture

3. **Course Coordinator:** Dr. Farid Farahmand

4. **Textbook:** Serpanos, Dimitrios, and Marilyn Wolf. *Internet-of-Things (IoT) Systems: Architectures, Algorithms, Methodologies*. Springer, 2016.

5. **Supplemental Materials:** None

6. **Specific Course Information:**

7. **Description:** This course introduces the design principles, components, infrastructure-related architectures, and networking protocols used to develop the Internet-of-Things (IoT). The course also introduces a wide range of IoT applications and provides hands-on experiences via a series of projects.

   a. **Prerequisites:** EE 310, EE 330, EE 465 or consent of instructor.

   b. **Co-Requisite:** None

   c. **Status:** ☐ Required for EE program, ☑ Elective, ☐ Selected Elective

8. **Specific Goals for the Course:**

   a. **Specific outcomes of instruction:** Upon successful completion of this course the students will be able to:

      i. Demonstrate knowledge of fundamental principles of IoT systems.

      ii. Demonstrate knowledge of various types of sensors and embedded systems used in IoT systems.

      iii. Evaluate and analyze IoT system performance.

      iv. Demonstrate knowledge principles used to develop an end-to-end IoT system.

      v. Utilize appropriate software tools and programs to develop an end-to-end IoT system.

   b. **This course supports the following ABET Student Outcomes:**

      SO-1: an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

8. **Brief List of Topics to be Covered:**

   a. Overview of IOT building blocks

b. Wireless technologies for IoT systems

c. IoT common protocols

d. Power consumption

e. Sensors and their interfaces

f. A quick review of available cloud platforms

g. Data visualization using PHP/Java script

h. IoT security

i. Design project