FALL 2016
Computer Science
Special Topics

CS 591-5
Tuesday/Thursday
12:35-1:50 PM
NECK 218

Instructor – Dr. Henry Hexmoor

Cyber Physical Systems - <u>Internet of Things</u>

The goal of this course is to introduce and develop an understanding of the computing and communication for Internet of Things as a subset of Cyber Physical systems. Connectivity among devices in our daily lives such as WiFi-enabled thermostats, smarts grids, and driverless cars is ushering in an era of sociality that transcend human social networks to machine to machine networks. Lecture material in the first half of course will cover key concepts from wireless and sensor networks. The second half of class will be run as a seminar with presentations. Team project is a key part of this course. Each project will demonstrate a salient application of interest to students including sensor/actuator apps and ambient environments.

Students will purchase their own personal [Raspberry Pi](#) single board computer. Students use [Cayenne](#), a free drag and drop IoT project builder that enables developers and beginners to rapidly prototype and set up triggers, alerts, and scheduled actions.

Sources:
1. S. Greengard, 2015. The Internet of Things, MIT Press.
2. M. Dearborn, 2015. Fundamentals of Diffusion-Based Molecular Communication, Now Publishers.
3. D. Norris, 2015. The Internet of Things: Do-It-Yourself at Home Projects for Arduino, Raspberry Pi and BeagleBone Black, McGraw-Hill Pub.