

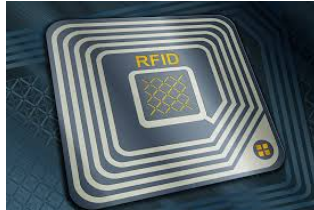
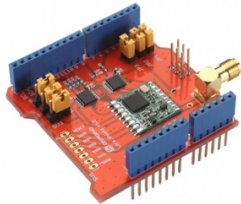
# Spring 2018 CS755 Advanced Computer Networks

## Internet of Things

**Lecture:** Art and Design Building L008, Fridays 1:30-4:10PM

**Instructor:** Song Min Kim ([song@gmu.edu](mailto:song@gmu.edu)), Office hour: Fridays 4:30-6:30PM

**Course web page:** All class materials in blackboard <https://mymasonportal.gmu.edu/>



### Course summary and objectives

Internet of Things (IoT) collectively refers to devices, technologies, and services that improves the quality of our lives via pervasively connected everyday objects. This course covers diverse IoT networking technologies and standards, ranging from physical to network layers. We will also study a wide range of state-of-the-art IoT systems; Tentative topics include (i) RFID systems, (ii) RTL-SDR, and (iii) low-power wide area networks, which we will study in depth through research paper discussion and real-world implementation projects. This course aims at:

- Acquiring basic knowledge on IoT networking
- Learning state-of-the-art IoT research trends in latest papers and insight on top-quality research
- In-depth understanding of the topic of interest via reading, presenting, and real-world implementation

**Note:** This course satisfies the breadth requirement of “Systems and Networks” for CS MS

### Prerequisites

CS555 (Computer Communications and Networking) and programming proficiency (C or Java) are required. Prerequisites may be waived upon demonstrating sufficient background approved by the instructor.

### Textbook

No textbook. We will discuss the latest research publications in premier venues.

### Grading policies

The scale may be lowered or raised as needed, mostly to assign appropriate letter grades for students in borderlines, or to adjust for overly difficult or easy assignments.

Paper critiques:	20%
Class participation	5%
Paper presentation:	30%
Self-directed project:	45%

## Course load

No exam. Weekly paper critiques, two paper presentations, and a final (group) project. The project is self-driven, where you implement state-of-the-art IoT design of your choice. Details will be given in the class.

**Paper critiques:** One or two paper critiques per week. Each critique should be 1/2 page (single-spaced, 10pt font). Hard copy should be submitted before the start of the class. Neither email submission nor submission on other's behalf are allowed. You are allowed to miss 2 critiques (assuming all other critiques are good) without any score deduction.

**Paper presentations:** Each oral presentation is for 45 minutes, plus 15 minutes for QnA. The presentation should not only cover the in-depth discussion of the paper, but also all necessary background and related work for the class to fully understand the technical approach described in the paper. The evaluation criteria includes presentation clarity, organization (including related work), technical content (including critique), and answers to the questions raised by the class.

**Final project:** May work individually, or in groups of two (exceptionally 3 under instructor consent). While students get to work on research topics they decide to investigate, the topic should be discussed with and approved by the instructor for course relevance, workload, etc. The project should be real-world implementation of a latest work in top venues (i.e., In Mobicom, SenSys, IPSN, MobiSys, SIGCOMM, NSDI in the last 3years). The project should include experiments for empirical/analytical evaluation as well as experience/insight obtained while implementing. The project has three elements.

- **Project proposal:** A single-page document and a 10-15 min. in-class oral presentation of the project.
- **Project presentation:** In-class 20-30 minute oral presentation of the project outcome. Extra credit for demo during the presentation.
- **Project report:** Project report in two-column IEEE proceedings template

**Class participation:** Attendance, checked with submitted hard-copies of paper critiques.

## Honor code

All students must adhere to the Honor Codes of [GMU](#) and the [Department of Computer Science](#). Violation will result in a failing grade.

## Disability statement

If you have a disability or other condition affects that may affect your academic performance, please document it with the [Office of Disability Services](#) and let the instructor know in the first week of the semester to accommodate needs.