

**Fall 2015: ICS 491 – Special Topics:**  
**Security and Privacy for Internet of Things**

<b>Time</b>	Monday & Wednesday, 12:00-01:15pm.
<b>Location</b>	HOLM 211
<b>Course Pre-requisites</b>	N/A
<b>Instructor</b>	Depeng Li ( <a href="mailto:depengli@hawaii.edu">depengli@hawaii.edu</a> )

**Course Description:**

The growing importance of Internet of Things (IoT) and their use to support critical applications, has made security & privacy a central issue today. However, it becomes evident how vulnerable our information system, communication system and infrastructure system actually are. Meanwhile, sensitive / private information can be stolen / leaked while it is collected, stored, processed, and shared at the personal devices, the cloud, and the communication channels in between.

The main objectives of this course are to: 1) introduce high quality works highlighting security & privacy issues, 2) explain the state-of-the-art methodologies in security& privacy, 3) model threats and countermeasures, and 4) discuss corresponding case studies, in areas of IoT.

The general theme of this course is to provide students an overview for the security and privacy. This research oriented class will introduce participants to interesting topics in security and privacy with the support of practical examples e.g. smart grids, smart home/city, mobile healthcare, secure control platform for physical, human and cyber (phc) triad, applied cryptography, etc. Students will read assigned research papers and make presentations to discuss the related research problems. Topics intended for discussion include but are not limited to basic concepts and techniques in information security and management such as authentication, access control, network attacks and defense, intrusion detection, multilevel security, privacy mechanisms and security management. High-level concepts such as confidentiality, integrity, and availability will be covered. Students in this course will be armed with a set of techniques which enable them to address the security & privacy challenges.

## Lecture Schedule (Tentative)

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### 1. Overview of Security and Privacy in Information System

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### 2. Internet of Things (IoT) Security and Privacy

- 2.1 Introduction of Internet Of Things
  - 2.2 Security and Privacy for IoT
  - 2.3 Architecture & Component of IoT
  - 2.4 Case Study 1: Smart Home
  - 2.5 Case Study 2: Smart Grid Network
  - 2.6 Case Study 3: Secure Control Platform for Flight
  - 2.7 Case Study 4: Mobile HealthCare
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#### **Textbook:**

This class does not have a required textbook.