

EECE 658 Hardware-based Security

Course Syllabus, Spring 2012

Course Description

Information and infrastructure security in cyber space is a critical issue to national interests nowadays. Most research efforts focus on computation. However, eventually security solutions including algorithm and variant defense schemes are running on certain hardware. This course exposes students to the state of the art in research into the design, application, and evaluation of hardware techniques to achieve security properties in high-level computation. We will cover the ideas and trends in this active research area from architectural and application perspectives.

Text:

Research papers from prestige conferences and journals.

Prerequisites:

Basic knowledge of computer/information security (EECE457 or EECE560), computer networks (EECE359 or EECE553), computer architecture (EECE352 and/or 552).

Class Times & Location:

Tuesday & Thursday, 4:25pm ~ 5:50pm, S1 158

Instructor: Yu Chen

Office: ES-2309

Phone: (607) 777 - 6133

Email: ychen@binghamton.edu

Office Hour: 3:00 ~ 4:00pm, Tuesday & Thursday, or by appointment.

Grading:

✓ Paper Reading Assignments	50%
○ Paper Discussion Presentations	(10% x 2)
○ Paper Reading Reports	(10% x 3)
✓ Research Project	50%
○ Project Selecting Report	(5%)
○ Intermediate Project Report	(10%)
○ Project presentation	(10%)
○ Final Project Report	(25%)

Topics (if time allows):

1. Review basics of Computer Network Security
2. Concept of hardware based security
3. Secure processors and platforms
4. Secret protection
5. Application-dependent secure processor
6. Reconfigurable hardware in network security
7. Virtualization
8. Biometric Identification/Recognition

Policies:

The university academic integrity code is listed in the University Bulletin. Category I violations will result in a grade of **ZERO** for the work plus a one letter course grade reduction. Category II violation will result in a failing grade of the course. (<http://bulletin.binghamton.edu/integrity.htm>)