

## CS 546 Computer Security (Spring 2019)

**Instructor:** Dr. Jyh-haw Yeh

**Office:** CCP 247      **Phone:** 426-3034      **email:** jhyeh@boisestate.edu

**URL:** <http://cs.boisestate.edu/~jhyeh/cs546/cs546.html>

**Class Time:** TTH 3:00–4:15 PM      **Location:** CCP 368

**Office Hours:** MoTuWe: 2:00–3:00 PM

**Teaching Assistant :**

TA and Tutor	Office hours	Location
(TA) William Unger	Check the tutor center schedule	Tutoring Center (CCP 241)

**Textbook:** *Network Security – Private Communication in A Public World, 2nd edition*, by Charlie Kaufman, Radia Perlman and Mike Speciner/Prentice Hall PTR.

**Catalog Description:** Computer and network security. Public-key and private-key cryptography, authentication, digital signatures, key exchange, key management, certification authorities, and distributed trust models. File system security, Mail system security, and Web security. Intruders, Trojan Horses, and viruses. Covert channels.

**Prerequisites:** CS 453 Operating Systems or regular admission to CS graduate programs

**Major Course Topics:**

- Introduction to Computer Security
  - Security Goals and Threats
  - Firewall (more details later)
  - Access Controls – Mandatory (Multilevel Security), Discretionary
- Cryptology and cryptography – Symmetric, Asymmetric, One-way Hashing, Elliptic Curves and their cryptographic applications.
- Encryption-based Protocols
- Authentication Systems
- Some Network Security Protocols
- Special Topic: Cloud Security
- May have more or less topics based on the available lectures

## Term Report:

I will identify 5 to 10 research topics in computer security area at the mid-point of this semester. From those identified topics or any other interesting security topic, you should pick one and collect at least 8 related articles (journal, conference, or technical reports). Half of the articles should be published within past 10 years.

**Term Report Proposal (1-2 pages):** You have three weeks to collect and study the published articles and write your proposal before due.

- A good proposal: Identify (describe) the problem to be solved, and then describe some related work, your proposed approach(es) and why it is better than others, and the way to deliver research results.
- A survey proposal: Identify (describe) the problem to survey, argue the possible contribution(s) of this survey, and the related work you would like to survey.

**Term Report (5-8 pages):** You need to read over collected articles and put some research effort on the topic. The structure of term reports is similar to proposals, but with great details and research results that validate the hypothesis in proposals. For survey report, great details of comparison among those related work should be included, and it is expected to have your own opinions about the survey topic to conclude the report.

At the end of both proposal and term report, collected articles should be listed as “References.”

## Grades and Grading Policies

### Grading:

- Homeworks/Programming/Term Report (50%).
- Mid-term Examination (20%).
- Final Examination (30%).

**Final Grade:** You are guaranteed to receive at least the grade as follows (I reserve the right to lower the cutoffs if I feel it is appropriate).

- $89 \leq A^- < 91 \leq A < 97 \leq A^+$
- $79 \leq B^- < 81 \leq B < 87 \leq B^+$
- $69 \leq C^- < 71 \leq C < 77 \leq C^+$
- $59 \leq D^- < 61 \leq D < 67 \leq D^+$
- $F < 59$

### Grading Policy:

- Homeworks will not be accepted late.
- Programming assignments must be submitted electronically to the instructor by 11.00PM of the due date to avoid any penalty. Within one week after the deadline, you can still submit your assignment. However, 20% late submission penalty will be applied. No submission will be accepted after one week past the due date.

- All students should submit correct and complete files to the instructor. Any accidentally wrong or incomplete submission may need to submit again and incur the submission penalty. The points you can get for incorrect programs are as follows.
  - Can not be compiled or run time error: no points.
  - Wrong answer: Varying from 0% to 80% points depends on the answer.

**Academic Honesty:**

- Each student must work independently unless specified otherwise.
- Determination of academic dishonesty is at the discretion of the instructor of the course within the policy guidelines of the University.