

**San Jose State University**  
**Department of Computer Science**  
**CS 266, Topics in Information Security, Sec 1, Fall 2017**

**Course Outline**

**Course and Contact Information**

<b>Instructor:</b>	Melody Moh
<b>Office Location:</b>	MQH 411
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<b>Office Hours:</b>	Mon and Wed 1120 to 1150 and Wed 1450 to 1530
<b>Class Days/Time:</b>	MW 1200 to 1315
<b>Classroom:</b>	MQH 422
<b>Prerequisites:</b>	CS 166 or instructor consent

**Course Format**                      Lecture

**Faculty Web Page and MYSJSU Messaging (Optional)**

*Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on my faculty web page <http://www.cs.sjsu.edu/~melody/index.html>*

*You are responsible for regularly checking with the email system through [MySJSU](http://my.sjsu.edu) at <http://my.sjsu.edu> to learn of any updates.*

**Course Description**

Advanced topics in the area of information security. Content differs with each offering. Possible topics include, but are not restricted to: Network Security, Software Reverse Engineering and Cryptanalysis. Prerequisite: CS 166 or instructor consent. Repeatable for credit when topic changes.

This semester, topics include the following (time permits):

- Introduction, network security overview.
- Symmetric ciphers: block ciphers, DES, AES, block cipher operations.
- Asymmetric ciphers: public-key cryptography, RSA.
- Cryptographic data integrity: hash functions, message authentication codes, digital signatures.
- Mutual authentication: key management and distribution, user authentication.
- Network and Internet security: network access control and cloud security, transport-level security, wireless network, email and IP security.
- Advanced topics of network and cloud security.

**Course Learning Outcomes (CLO)**

**Upon successful completion of this course, students will be able to:**

1. **CLO 1** - Understand the above covered topics through completion of homework, quizzes, and

examinations.

2. **CLO 2** - Successfully complete labs and programming projects on advanced mobile networking and cloud technologies.
3. **CLO 3** - Work in a (1 or 2 people) team to complete group projects, including independent research, oral presentation, and programming on a latest advancement in mobile networking.

### Required Texts/Readings

#### Required Textbook

William Stallings, "Cryptography and Network Security: Principles and Practice," 7th Edition, Pearson, 2017

#### References

- References for specific topics/projects will be given along with topic/project assignments.

### Course Requirements and Assignments

*Homework is due (hard copy) by class starting time on the due date. Each assigned problem requires a solution and an explanation (or work) detailing how you arrived at your solution. Cite any outside sources used to solve a problem. When grading an assignment, I may ask for additional information. A subset of the assigned problems will typically be graded.*

### ASSIGNMENTS

Refer the course website for latest information of assignments.

- **HW:** Weekly homework assignments and several in-class quizzes
- **PROJ:** Several hands-on labs, individual and/or group research and programming projects will span the entire semester
- **Oral Presentation:** Included in projects (PROJ)

### EXAMS

One mid-term exam (**Mid**) scheduled approximately at the end of 8th week, and a final exam (**FIN**).

### Schedule

For continual updates of course schedule, please check the course webpage available at [http://www.cs.sjsu.edu/~melody/CS266\\_17F.html](http://www.cs.sjsu.edu/~melody/CS266_17F.html)

CS 266 final exam is scheduled on the last day of instruction, Mon Dec 11, 12:00-1:15pm.

### Grading Policy

- I will determine letter grades for the course, including +/- grades based on

<i>Percentage</i>	<i>Grade</i>
92 and above	A
90 - 91	A-
88 - 89	B+
82 - 87	B
80 - 81	B-
78 - 79	C+
72 - 77	C
70 - 71	C-

60 - 69	D
59 and below	F

- Percentage weight [or point value] assigned to various class assignments
  - HW - 20%, PROJ- 40%, Mid - 20%, FIN - 20%.
- **No** make-up exams will be given and **no** late assignment will be accepted.

NOTE that [University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) at <http://www.sjsu.edu/senate/docs/F69-24.pdf> states the following:

- *Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.*

### Classroom Protocol and Other Notes

- **Always start your email subject with "CS266" to get my attention.**
- The pre-requisite to this course (CS 166) will be monitored.
- It is preferred that you either have taken an undergraduate operating systems class.
- **Cheating** will not be tolerable; a ZERO will be given to any cheated assignment/exam, and will be reported to the Department and the University.
- **Wireless laptop** is required. Your laptop must remain closed (preferably in your backpack and not on your desk) until you are informed that it is needed.
- To encourage participation from students, **no** recording is allowed.
- Students must be respectful of the instructor and other students. For example: turn off/silence **cell phones and other mobile devices**.
- Attendance is crucial to doing well on assignments and examinations.
- Students are responsible for all materials distributed and discussed in the class.
- Office hours are on a 90% basis; they may be rescheduled or canceled due to conflicting department/university or other professional meetings.

### University Policies (Required)

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

### CS 266, Fall 2017, Course Schedule

*The schedule is subject to change with fair notice; the notice will be made available in class.*

### Course Schedule

Weeks	Topics
1	Introduction to networks and network security
2	Symmetric ciphers
3	Symmetric ciphers
4	Asymmetric ciphers
5	Cryptographic data integrity
6	Cryptographic data integrity
7	Mutual authentication and key management

8	Network and Internet security
9	Network and Internet security
10	Wireless mobile network and IoT security
11	Wireless mobile network and IoT security
12	Cloud security
13	Cloud security
14	Advanced topics in network and cloud security
15	Advanced topics in network and cloud security
16	Review
Final Exam	Monday, December 11, 12pm