

Course Syllabus

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San Jose State University

Department of Computer Science

CS 166, Information Security, Fall 2021

Course and Contact information

- **Instructor:** Dr. Paul Sanghera
- **Office Location:** [Online Office](#)
Canvas: <https://sjsu.instructure.com/courses/1466950/pages/office-dr-paul-sanghera>
Zoom: <https://sjsu.zoom.us/j/87018066263> (<https://sjsu.zoom.us/j/87018066263>)
Office Hours: **Thursdays** 4:00 PM – 5:00 PM
- **Telephone:** 408-858-1655
- **Email:** paul.sanghera@sjsu.edu (<mailto:paul.sanghera@sjsu.edu>) (preferred)
- **Class Days/Times:** **Tuesday** and **Thursday**, **6:00-7:15 pm** **Class Location:** **Zoom:** <https://sjsu.zoom.us/j/82974948876> (<https://sjsu.zoom.us/j/82974948876>)
- **Prerequisites:** CS 146 (with a grade of "C-" or better) and either CS 47 or CMPE 102 or CMPE 120 (with a grade of "C-" or better); or instructor consent.

Course Description

This course covers fundamental security topics including cryptography, protocols, passwords, access control, software security, and network security. Additional topics selected from multilevel security, biometrics, tamper-resistant hardware, information warfare, e-commerce, system evaluation and assurance, and intrusion detection are also addressed.

Zoom Class Meeting

Tuesday: 6:00 --- 7:15 pm

Thursday: 6:00 --- 7:15 pm

Course Format

Technology Intensive: Hybrid Online Courses

This course will be taught online. You need Internet connectivity and zoom installed on your a computer to participate in the classroom activities and submit assignments.

Installing Zoom

<https://www.youtube.com/watch?v=fVu9BILRkww>

Learning Outcomes

After completing this course you should be able to know and explain the fundamental concepts, principles, and protocols of information security and understand the major technical security challenges in each of the following four areas: cryptography, access control, protocols, and software.

Note. You are responsible for regularly checking with the messaging system through Canvas including [The Course Announcement](#) to learn of any updates, and actions to preform.

Required Texts/Readings

Textbook

[Information Security: Principles and Practice](#)

[http://www.amazon.com/gp/product/0470626399/ref=pd_lpo_k2_dp_sr_1?pf_rd_p=486539851&pf_rd_s=lpo-top-stripe-1&pf_rd_t=201&pf_rd_i=B000PY45AC&pf_rd_m=ATVPDKIKX0DER&pf_rd_r=1GGTMQBSJRM4NK9EXYEY\)](http://www.amazon.com/gp/product/0470626399/ref=pd_lpo_k2_dp_sr_1?pf_rd_p=486539851&pf_rd_s=lpo-top-stripe-1&pf_rd_t=201&pf_rd_i=B000PY45AC&pf_rd_m=ATVPDKIKX0DER&pf_rd_r=1GGTMQBSJRM4NK9EXYEY)).

2nd edition, Mark Stamp,

(Wiley, May 2011, ISBN-10: 0470626399, ISBN-13: 978-0470626399).

Other Readings

Other readings will be listed on the class schedule.

Course Requirements and Assignments

Homework Assignments:

Homework assignments will be posted and submitted on Canvas.

Quizzes:

There will be around 10 quizzes aimed at checking your understanding, on the go, about the learned material, including Lectures, Textbook Reading Assignments, and any articles if assigned to read. A quiz will be announced/scheduled a week ahead, and you must be in the online classroom to take the quiz.

Missed quizzes **cannot** be made up.

Midterm Exam:

The midterm exam will take place in the classroom during class time on [September 30](#) during regular class hours.

Final Exam:

The final exam will be comprehensive, i.e. can ask any question from the scope of the entire course.

Note: Assignments are due by 11:59 PM Pacific Time on the specified day.

Late homework assignments will NOT be accepted

Grading Information

The final grade in the course will be calculated based on the following percentages:

1. Homework Assignments: 30%
2. Quizzes: 20%
3. Midterm: 20%
4. Final Exam: 25%
5. Participation online discussion forum, [CS166 Forum Interact](#): 5%

Grading Scale

Nominal grading scale:

Percentage Grade

93 and above A

90 - 92 A-

87 - 89 B+

82 - 86 B

80 - 81 B-

77 - 79 C+

72 - 76 C

70 - 71 C-

67 - 69 D+

62 - 66 D

60 - 61 D-

59 and below F

Classroom Protocol

■ Keys to success:

- Do the readings and assignments, and attend class.
- Regular attendance is an integral part of the learning process. Please arrive on time for the classes.
- **Laptop or desktop with Internet connection is required.** During the online Zoom class, I will be sharing my **PowerPoint Presentation** with the class. You can get more from the lecture by following the pointer on the PowerPoint just like room class presentation, but this time it would on your computer screen instead of Overhead Projector screen.
- In Many aspects, Zoom class is like Room class; so:
 - Please, reveal your identity, e.g. use video with live you, not your static picture.
 - Be on your laptop (not phone), and at a safe place, not on the run.
- **Cheating** will not be tolerated. Working together is encouraged, but no copying of the answers; use the online discussion forum: **[CS166 Forum Interact](#)**
- **Professionalism.** Student must be respectful of the instructor and other students. In the class session, keep your video on.

University Policies

Office of Graduate and Undergraduate Programs maintains university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. You may find all syllabus related university policies and resources information listed on GUP's **[Syllabus Information web page](#)** (<http://www.sjsu.edu/gup/syllabusinfo/>) at <http://www.sjsu.edu/gup/sylla>

Course Schedule

Please note that the schedule is subject to change with fair notice, which will be posted through [Canvas](#).

Week	Date	Topics
1	August 19	Introduction
2	August 24	Crypto basics I
2	August 26	Crypto basics II
3	August 31	Symmetric Key Crypto I
3	September 2	Symmetric Key Crypto II
4	September 7	Public Key Crypto I
4	September 9	Symmetric Key Crypto II
5	September 14	Hash Functions
5	September 16	Hash Functions & Other topics
6	September 21	Authentication I
6	September 23	Authentication II
7	September 28	Authentication iii & MIDTERM REVIEW
7	September 30	MIDTERM





Week	Date	Topics
8	October 5	Network security basics I
8	October 7	Network security basics II
9	October 12	Simple Authentication Protocols I
9	October 14	Simple Authentication Protocols II
10	October 19	Simple Authentication Protocols III
10	October 21	Real-world Security Protocols I
11	October 26	Real-world Security Protocols II
11	October 28	Real-world Security Protocols III
12	November 2	Software Flaws and Malware I
12	November 4	Software Flaws and Malware II
13	November 9	Software Flaws and Malware III
13	November 11	Veteran's Day
14	November 16	Insecurity in Software I
14	November 18	Insecurity in Software II
15	November 23	Other Security Topics I
15	November 25	Thanksgiving Day

Week	Date	Topics
16	November 30	Other Security Topics II
16	December 2	FINAL EXAM REVIEW
17	December 6 (Monday)	Last Day of Instructions
Final Exam		TBD

Note:

[SJSU ACADEMIC YEAR CALENDAR 2021/22 \(https://www.sjsu.edu/provost/docs/Academic_Calendar-AY2021-22.pdf\)](https://www.sjsu.edu/provost/docs/Academic_Calendar-AY2021-22.pdf)

Course Summary:

Date	Details	Due
Thu Aug 19, 2021	 Zoom Meeting: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1667302&include_contexts=course_1466950)	5:55pm to 7:55pm
	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688067&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Aug 24, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688068&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Aug 26, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687939&include_contexts=course_1466950)	4pm to 5pm

Date	Details	Due
Tue Aug 31, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688069&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Aug 31, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688070&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Sep 2, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687940&include_contexts=course_1466950)	4pm to 5pm
Tue Sep 7, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688071&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Sep 7, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688072&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Sep 9, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687941&include_contexts=course_1466950)	4pm to 5pm
Tue Sep 14, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688073&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Sep 14, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688074&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Sep 16, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687942&include_contexts=course_1466950)	4pm to 5pm

Date	Details	Due
Tue Sep 21, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688075&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Sep 21, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688076&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Sep 23, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687943&include_contexts=course_1466950)	4pm to 5pm
Thu Sep 23, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688077&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Sep 28, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688078&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Sep 30, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687944&include_contexts=course_1466950)	4pm to 5pm
Thu Sep 30, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688079&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Oct 5, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688080&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Oct 7, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687945&include_contexts=course_1466950)	4pm to 5pm

Date	Details	Due
Tue Oct 12, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688081&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Oct 12, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688082&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Oct 14, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687946&include_contexts=course_1466950)	4pm to 5pm
Tue Oct 19, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688083&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Oct 19, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688084&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Oct 21, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687947&include_contexts=course_1466950)	4pm to 5pm
Tue Oct 26, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688085&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Oct 26, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688086&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Oct 28, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687948&include_contexts=course_1466950)	4pm to 5pm

Date	Details	Due
Tue Nov 2, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688087&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Nov 2, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688088&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Nov 4, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687949&include_contexts=course_1466950)	4pm to 5pm
Tue Nov 9, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688089&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Nov 9, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688090&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Nov 11, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687950&include_contexts=course_1466950)	4pm to 5pm
Tue Nov 16, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688091&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Nov 16, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688092&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Nov 18, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687951&include_contexts=course_1466950)	4pm to 5pm

Date	Details	Due
Tue Nov 23, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688093&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Nov 23, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688094&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Nov 25, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687952&include_contexts=course_1466950)	4pm to 5pm
Thu Nov 25, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688095&include_contexts=course_1466950)	5:55pm to 7:25pm
Tue Nov 30, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688096&include_contexts=course_1466950)	5:55pm to 7:25pm
Thu Dec 2, 2021	 Office Hours: FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1687953&include_contexts=course_1466950)	4pm to 5pm
Thu Dec 2, 2021	 FA21: CS-166 Sec 06 - Information Security (https://sjsu.instructure.com/calendar?event_id=1688097&include_contexts=course_1466950)	5:55pm to 7:25pm