

Course Syllabus

San Jose State University Department of Computer Science CS 166, Information Security, Fall 2022

(In-Person)

Note:

Fall 2022 COVID-19 and Monkeypox Safety Training

Students registered for a College of Science (CoS) class with an in-person component should view the [CoS COVID-19 and Monkeypox Training](#) slides for updated CoS, SJSU, county, state and federal information and guidelines, and more information can be found on the [SJSU Health Advisories](#) website. By working together to follow these safety practices, we can keep our college safer. Failure to follow safety practice(s) outlined in the training, the SJSU Health Advisories website, or instructions from instructors, TAs or CoS Safety Staff may result in dismissal from CoS buildings, facilities or field sites. Updates will be implemented as changes occur (and posted to the same links).

Course 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**.

Contact information

- **Instructor:** [Dr. Paul Sanghera](#)
- **Telephone:** 408-858-1655 (email preferred)
- **Email:** paul.sanghera@sjsu.edu (**For this course:** Please use Canvas InBox)

Class Meeting

Location: [Science Building: 311](#)

When?

Tuesday: 12:00 --- 1:15 PM

Thursday: 12:00 --- 1:15 PM

- **Office Hours:**

Thursdays: 8:00---9:00 PM

Online:

Zoom: Join URL: <https://sjsu.zoom.us/j/83624165051>

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.

Course Format

Technology Intensive: In-Person. Uses Canvas and Zoom

This course will be taught In-Person. However, you need Internet connectivity and zoom (for office hours) installed on your computer. Intensive use of Canvas will be made: by you submitting assignments, using InBox to send me messages, take part in course discussion forum etc; and by me making course announcements, giving you feedback on Quizzes/Tests and Assignments, and creating and taking part in course discussion forum.

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

Required:

Information Security: Principles and Practice, 2nd/3rd edition, Mark Stamp, (Wiley, May 2011, ISBN-10: 0470626399, ISBN-13: 978-0470626399).

Recommend

Principles of Information Security by Michael E. Whitman, Herbert J. Mattord.

Other Readings

Other readings will be listed on the class schedule (in Canvas Modules).

Course Requirements and Assignments

Purpose of the assignments is two fold: 1) *test/reinforce* the learning of course material, and 2) *enhance learning* both in scope and understanding.

Homework Assignments:

Homework assignments will include problems giving you the opportunity in apply ideas and principles you learned to reach solutions. Although all related to what your learned in the course, some may include extra learning and a little bit of search/research; *enhancing learning*.

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.

Quiz questions are often deliberately aimed at exposing the holes and weaknesses in your understanding. Due to these holes and weaknesses, some time it may look like you are being tricked or the question the confusing. When it happened to you, it is time to revisit the concepts or principles involved in the question. This is one way quizzes enhance your learning or understanding.

Midterm Exam:

The midterm exam will take place in the classroom during class time 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, and will also take place in class.

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

Late homework assignments will NOT be accepted

Grading Information

This course uses the clear grading criteria as described in this and following section.

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 and Pop Quizzes: 5%

Grading Scale

Nominal grading scale:

Percentage	Grade
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95 and Above	A+
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93 - 94	A
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90 - 92	A-
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87 - 89	B+
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82 - 86	B
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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

Online Tool Canvas

As a tool, Canvas is an integral of my teaching whether the course is online or in-person. For example, in this course, you will follow the syllabus live on [Canvas==> Modules](#) as it is being covered; at a given time, the schedule may not exactly match with that of the static schedule presented in the beginning of the course. Other Canvas features used include the following:

1. [Homework Assignments](#) are posted on and submitted to Canvas. [Tests/exams](#) are also posted and taken in Canvas. Your grades show up in Canvas Grade Books.
2. Other than the class lectures, in Zoom or Room, my main method of communication with the class with "[Course Announcement](#)" feature of Canvas. You don't wanna miss it.
3. [CS166 Forum Interact](#). You will be using this multipurpose Forum to interact mainly with other student in the class, but also with me. This is the Forum where you get most of the help on non-confidential course topics/issues, help other students, interact with other students in professional manners, and contribute to establishing an atmosphere that facilitated learning.

Note the following:

- 1) If you missed in the class or are still not sure about it, you can ask question or discuss the [relevance of any course content](#), in CS166 Forum Interact.

2) The *feedback about student work* is provided by various means: 1) course announcements (collective students feedback), 2) Individual feedback as comments in the student's Grade Book, 3) Personal feedback provoked by students' question or query using Canvas Inbox, 4) Unprovoked personal feedback initiating from me using Canvas Inbox, if deemed necessary by the instructor.

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 be 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.

Students Help/Assistance

As a part of my teaching philosophy, I am very responsive to questions and comments from students. You will receive the needed responses and reasonable help if you follow your part of the following protocol:

1. For personal/confidential topic/issue such as individual grade, queries should be made, or information/assistance should be sought by leaving message in Canvas Inbox for me.

2. On non-confidential topic/issue, help could be provided both by me or/and your fellow students. You can post about general course issues/concept and problem solving questions including those from the assignments, if you are stuck, on :

CS166 Forum Interact: General Concept and Problem Solving

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 \(Links to an external site.\)](http://www.sjsu.edu/gup/sylla) at <http://www.sjsu.edu/gup/sylla>

Course Schedule

Note: This is static schedule. To check out the running schedule, please consult the weekly modules on **Canvas**.

Week	Date	Topics
1	Aug 23	Introduction to the Course & Information Security
1	Aug 25	Information Security/Crypto basics I
2	Aug 30	Crypto basics II
2	Sep 1	Symmetric Key Crypto I
3	Sep 6	Symmetric Key Crypto II
3	Sep 8	Public Key Crypto I
4	Sep 13	Symmetric Key Crypto II
4	Sep 15	Hash Functions

Week	Date	Topics
5	Sep 20	Hash Functions & Other topics
5	Sep 22	Authentication I
6	Sep 27	Authentication II
6	Sep 29	Authentication iii
7	Oct 4	Network security basics I
7	Oct 6	Network security basics II
8	Oct 11	Simple Authentication Protocols I
8	Oct 13	Simple Authentication Protocols II
9	Oct 18	Midterm Exam Review
9	Oct 20	Midterm Exam
10	Oct 25	Spring Break: No class
10	Oct 27	Network Basics

Week	Date	Topics
11	Nov 1	Network Basics
11	Nov 3	Real-world Security Protocols I
12	Nov 8	Real-world Security Protocols II
12	Nov 10	Real-world Security Protocols III
13	Nov 15	Software Flaws and Malware I
13	Nov 17	Software Flaws and Malware II
14	Nov 22	Software Flaws and Malware III
14	Nov 24	No Class: Thanksgiving Day
15	Nov 29	Security Topics: TBA
15	Dec 1	Security Topics: TBA
16	Dec 6 Tue	Final Review Last Class
16	Dec 8	

Week	Date	Topics
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Final Exam		
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		Final Exam: TBA
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Handy Links:

1. Here's the: 2022/23 AY calendar

<https://www.sjsu.edu/provost/docs/Academic%20Calendar-AY2022-23.pdf>