

Information Security

CS 166

Fall 2026 In Person 3 Unit(s) 08/19/2026 to 12/07/2026 Modified 08/19/2026

Contact Information

Instructor	Muhammad Shaikh
Email	muhammad.shaikh01@sjsu.edu
Lecture	Tuesdays and Thursdays 6:00 PM – 7:15 PM
Classroom	SCI311
Mode of Instruction	In Person
Office Hours	Duncan Hall (DH) 282 Tuesday & Thursday 5:25 PM – 5:55 PM (In Person)

Course Description and Requisites

Fundamental security topics including cryptography, authentication, access control, network security, security protocols, and software security. Networking basics are covered. Additional security topics selected from multilevel security, biometrics, blockchain, machine learning, information warfare, e-commerce, intrusion detection, system evaluation and assurance.

Prerequisite(s): 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); Computer Science, Applied and Computational Math, Forensic Science: Digital Evidence, or Software Engineering Majors only; or instructor consent.

Letter Graded

Classroom Protocols

This course is an in-person class. Keys to success: Do the homework and attend class regularly. While slides will be published for study, attending class and active participation are strongly encouraged.

- **Technology & Electronics:** Wireless laptops are required. However, unless the instructor specifies otherwise, laptops, cell phones, and other electronics cannot be used during class except in an emergency.
- **Academic Integrity & AI Policy:** Cheating will not be tolerated, but working together is encouraged. When submitting homework, all sources must be cited. Use of AI tools such as ChatGPT must be cited along with prompts otherwise it will be considered cheating.
- **Classroom Conduct:** Students must be respectful of the instructor and other classmates. Turn off cell phones, arrive on time, and remain in class until dismissed. Disruptive behavior or annoying talking will not be allowed. A valid picture ID is required at all times.
- **Recording Policy:** The instructor hereby gives students permission to record his lectures (audio and/or video). At least with respect to this class, your instructor has nothing to hide.

Program Information

Diversity Statement - At SJSU, it is important to create a safe learning environment where we can explore, learn, and grow together. We strive to build a diverse, equitable, inclusive culture that values, encourages, and supports students from all backgrounds and experiences.

Course Learning Outcomes (CLOs)

Upon successful completion of this course, students will be knowledgeable of the major technical security challenges in each of the following four areas:

- **Cryptography:** Symmetric key cryptography, public key cryptography, cryptographic hash functions, and authentication protocols.
- **Access Control:** Password policies, authorization schemes, and multilevel security concepts.
- **Networking & Protocols:** Network security fundamentals, simple authentication protocols, and real-world security protocols.
- **Software Security:** Software flaws, malware analysis, system assurance, intrusion detection, and machine learning applications in security.

Course Materials

Required Textbook

- Information Security: Principles and Practice, 3rd edition, Mark Stamp, Wiley, 2021. (Be sure to get the 3rd edition, and do NOT attempt to use the e-book version.)

Supplemental Resources

- Introduction to Machine Learning with Applications in Information Security, 2nd edition, Mark Stamp, Chapman and Hall/CRC, 2022.
- A Bug Hunter's Diary: A Guided Tour Through the Wilds of Software Security, Tobias Klein, No Starch Press, 2011.
- Software Reverse Engineering (SRE) at <http://reversingproject.info/>
- Network Security: Private Communication in a Public World, 2nd edition, Charlie Kaufman, Radia Perlman, and Mike Speciner, Prentice Hall, 2002.

- Security Engineering: A Guide to Building Dependable Distributed Systems, 3rd edition, Ross Anderson, John Wiley & Sons, Inc., 2020.
- Computer Viruses and Malware, John Aycock, Springer, 2006.

Information

- Syllabus and assignment instructions etc. can be found on Canvas. You are responsible for regularly checking the messaging system through SJSU for updates, or other communication system as indicated by the instructor.

Course Requirements and Assignments

SJSU policy states that students should expect to spend:

- 45 hours per unit over the semester

Student workload expectations are defined in University Policy S12-3:

<https://www.sjsu.edu/senate/docs/S12-3.pdf> (<https://www.sjsu.edu/senate/docs/S12-3.pdf>).

Weekly workload includes

- Reading the textbook
- In-person lecture
- Assignments, homework, quizzes
- Preparing for midterms & final exam

Grading Information

Course weightings will be as follows:

- 15% Homework, quizzes, class participation and other work as assigned.
- 25% Midterm #1 - First in-semester exam
- 25% Midterm #2 - Second in-semester exam

Final grades may be curved upward if needed.

Grading Scale:

Percentage	Grade
92 and above	A
90 - 91	A-
88 - 89	B+

Percentage	Grade
82 - 87	B
80 - 81	B-
78 - 79	C+
72 - 77	C
70 - 71	C-
68 - 69	D+
62 - 67	D
60 - 61	D-
59 and below	F

Boundary cases count as the higher of the two grades.

Assignment grades are reduced by 10% per day they are late. For example, an assignment is considered one day late if it is submitted a couple of minutes after the due date's 11:59 PM deadline. Assignment submitted four and half day late, max score it can receive is 50%. 9 days late submission gets zero.

University Policies

Per [University Policy S16-9 \(PDF\)](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the [Syllabus Information](https://www.sjsu.edu/curriculum/courses/syllabus-info.php) (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Key Semester Dates:

- Instruction begins Thursday August 20
- Last day to add or drop Tuesday, September 15
- No class November 26 (Thanksgiving Holiday)
- Last day of instruction Thursday December 3
- Final Exam Thursday December 10 - 5:30-7:30 PM