Introduction to Computer Security Principles

CECS 378: Section 1 (5283)

Spring 2024

Class Lecture	Time	Room
Tue Thu	11:00 AM - 12:15 PM	VEC-518

Instructor	Email	Office	Office Hours
Anthony Giacalone	anthony.giacalone@csulb.edu	ECS-530	10:00 - 11:00 AM Mon-Thu

Required Textbook

- Computer Security: Principles and Practice by William Stallings and Lawrie Brown. 2017. 4th edition.

Catalog Description

Prerequisites: CECS 229 and CECS 274 or CECS 275 all with a grade of C or better. An introduction to the fundamentals of cryptography and information and computer security. Basic concepts, theories and protocols in computer security. Basic cryptography, software security, operating system security, database security, network security, human factors, social engineering, digital forensics, privacy and anonymity. Letter grade only (A-F). (Lecture 2 hours, Laboratory 3 hours).

Course Goals

By the conclusion of this course, students will be able to:

- Understand the meaning and risks of computer security
- Apply problem solving skills to recognize and solve security problems
- Understand, recognize, and know how to avoid the main security vulnerabilities
- Make ethical decisions with respect to computer security and user privacy
- Know how to design and analyze a secure computer system in general

- Have a solid understanding of current, topical issues in computer security

Grading		Grade Scale	
Homework and Labs	35%	>= 90%	A
Exam One	20%	80% - 89%	B
Exam Two	20%	70% - 79%	C
Final Exam	25%	60% - 69%	D
		< 60%	F
Total	100%		

Exams

Students will take two midterm exams throughout the semester. There will be no makeups allowed for any quiz or exam. A final exam is administered at the conclusion of the semester. There may be some writing on the quizzes and exams.

Attendance

Attendance in this course is mandatory, as all material presented during class is fair game for exam questions or homework. Students are responsible for notifying the instructor about any extended leave of absences. There will be no makeups for assignments, quizzes, or exams that are missed due to an unexcused absence.

Class Rules

Homework and lab assignments will be assigned approximately every other week, and will mostly involve written work and coding.

- Homework and lab assignments are due on the date and time indicated on Github Classroom
- Homework may include writing code, doing research, essay writing, debugging programs, and other disciplines.
- Lab assignments will be coding projects designed to practice the concepts discussed in lecture.
- You are welcome to work on homework and lab assignments at home, but assistance will only be provided during classtime or office hours.

- Labs will be graded on correct answers to required deliverables and/or the completeness of the assignment. Incomplete assignments may receive partial or no credit at the discretion of the instructor.
- Students will be expected to read selections from the textbook for every lecture session. These readings should be done before class so that we can have a discussion on the topics during the lecture.
- During in-class exams or quizzes, there will be *no bathroom breaks*. Please be sure to use the restroom prior to the start of the exam. If a student leaves the classroom before the exam has been concluded, that student forfeits the completion of the rest of their exam.
- All source code submitted must be adequately commented in order to receive credit. Source code which is not commented with the student's own comments *will not receive any credit*.

Late assignments will, at a minimum, be subject to a 10% reduction in grade *per day* that the assignment is late. I do not accept homework submissions via email, fax, or any other means than the deliverable requirements listed on the assignment specification.

Tentative Class Schedule

Week	Subject
1	Intro to Computer Security (Ch 1)
2	Symmetric and Assymmetric Encryption (Ch 2, 20, 21)
3	Encryption, ctd
4	Encryption, ctd
5	First exam, Malicious Software (Ch 6)
6	Denial of Service Attacks (Ch 7)
7	DoS ctd, Database and Cloud Security (Ch 5)
8	Database, ctd.
9	Second Exam, Buffer Overflow Attacks (Ch 10)
10	**Spring Break**
11	Buffer Overflow, ctd
12	Buffer Overflow, ctd
13	User Authentication and Access Control (Ch 3, 4)
14	UAAC ctd, Intrusion Detection (Ch 8)

Week	Subject
15	OS Security (Ch 12)
16	Case Study, Final Exam

Computer Software

You will be responsible for finding and installing any software needed to complete the programming assignments for this course. While it is not strictly required, *I highly recommend either installing a Linux operating system on your computer or running a virtual machine with Linux as the OS*. This course can be completed in its entirety using free, open-source software.

Academic Honesty

There is zero tolerance for cheating, plagiarism, or any other act of violation of Academic Integrity Policy. Work that you submit is assumed to be original unless your source material is documented appropriately, using proper citation. Using the ideas or words of another person, even a peer, or a web site, as if it were your own, is plagiarism. Any individual or group caught cheating on homework, lab assignments, or any exam/quiz will be subjected to full extent of academic actions allowed under University regulations. At a minimum, any student caught violating Academic Integrity Policy will receive no credit for the work concerned and one grade lower letter grade. To learn more about the University policy on Cheating and Plagiarism, visit: Academic Integrity Regarding Cheating and Plagiarism

Withdrawal Policy

Students may request a withdrawal from the instructor as long as the request meets the requirements of the University and no more than one of the assigned midterm exams has been given to the class. Request for withdrawal from the course involving extenuating circumstances will be evaluated on a case-by-case basis at the discretion of the instructor.

COE Tutoring Services Available for Major Classes

The College of Engineering Tutoring Center offers free tutoring for many lower and upper division engineering courses in MAE, CECS, CECEM, CHE and EE. Tutors are available Monday through Friday

during the fall and spring semesters between the hours of 9:00am-6:00pm in EN2-300. Visit this website for detailed tutoring schedules.

Accommodations for Disability

Students with a disability or medical restriction who are requesting a classroom accommodation should contact the Bob Murphy Access Center (BMAC) at 562-985-5401 or visit SCC, room 110 during 8AM-5PM weekday hours. BMAC will work with the student to identify a reasonable accommodation in partnership with appropriate academic offices and medical providers. **We encourage students to reach out to BMAC as soon as possible**.

Accommodations for Food and Housing

Any student who is facing academic or personal challenges due to difficulty in affording groceries/food and/or lacking a safe and stable living environment is urged to contact the CSULB Student Emergency Intervention & Wellness Program. The website outlining the resources available is here. Students can also email supportingstudents@csulb.edu or call (562) 985-2038. If comfortable, students may reach out to the professor as they may be able to identify additional resources.