

**CYB 555**  
**Information Assurance and Network Security**  
**California State University Dominguez Hills**  
**Department of Computer Science and Technology**  
**Spring 2023**

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**Syllabus**

**GENERAL INFORMATION**

**Class Time:** Sunday 1:00 PM – 4:30 PM  
**Class Location:** SAC 2103, online: <https://csudh.zoom.us/j/88955649529>  
**Professor:** Dr. Alireza Izaddoost  
**Email:** [aizaddoost@csudh.edu](mailto:aizaddoost@csudh.edu)  
**Office:** NSM E-115  
**Office Phone:** 310-243-2873  
**Office Hours:** Monday and Wednesday 2:00 PM-4:00 PM; by appointment

**Course description**

This class teaches essential principles, techniques, tools, and methods for systems security, Information Assurance and Network Security. This course introduces students to foundational concepts pertaining to the broad area of security concepts. It starts with the central concept of a security protocol and cryptography, advanced cryptography, banking and bookkeeping, biometrics, network attack and defense, and phone security. The course considers security from the viewpoint of different interest groups, such as companies, consumers, criminals, police, and spies.

**Textbook**

(Recommended) Security Engineering: A Guide to Building Dependable Distributed Systems, the **3rd Edition**.  
ISBN: 978-1-119-64278-7 **December 2020**

**Course goals:**

The goal of the course is to provide an introduction to the design, implementation, and management of systems that remain dependable in the face of malice, error, or mischance. Topics include the tools, processes, and methods needed to design, implement and test complete systems, and to adapt existing systems as their environment evolves. Specifically, it includes cryptography, banking, network security, biometrics, and phone.

**Course outcomes:**

Upon completion of the course, students will demonstrate the ability to:

- identify company's security threats.
- design security policy and its enforcement.
- protect network and data communication.
- design a secure system.
- understand the fundamental principles of access control models and techniques, authentication.
- understand different cryptographic protocols and techniques and be able to apply them in communications.
- identify and mitigate security vulnerabilities in existing systems.

**GENERAL POLICIES:**

**Required Computer Software/Hardware Capabilities**

- Computer
  - You must have access to a reliable computer for this course. If you are on campus and do not have a laptop, you can check out a laptop from the IT User Services Help Desk via Technology Checkout Program. In addition, the Toro Student Computer Lab offers on-campus access to workstations with a wide variety of commonly used software. Visit the CSUDH Online Courses Technical Requirements page for more information on technology requirements.
- Zoom
  - This course will use Zoom web conferencing software for online meetings/office hours/online lectures.
- Email
  - All email communications from this course will go through your Toromail, the CSUDH student email system.
- Internet and Campus Wireless Network
  - You must have Internet access to participate in this course. If you are on campus, connect your laptop and mobile device to the internet using the eduroam campus wireless network.

## **Knowing Your Responsibilities**

CSUDH provides you with a wide variety of academic assistance and personal support, but it is up to you to know when you need help and to seek it out. It is your responsibility to keep informed and to obey the rules, regulations and policies which control your academic standing and your life as a CSUDH student. Meeting deadlines, completing prerequisites and satisfying the degree and certificates requirements, as found in the curriculum guides in this catalog, are all part of your duties as a student. Consult this catalog, the college and school announcements and the schedule of classes for the information you need. Watch for official announcements.

### **Netiquette**

Just as respectful conversational techniques are expected in an on campus classroom, proper netiquette is important when taking an online class.

## **CSUDH Standards of Student Conduct**

All students must conform to the Standards of Student Conduct, which have been established by students and college staff and have been approved by the Board of Trustees. The Standards of Student Conduct are listed in the Academic Policies section of the university Catalog.

## **Accessibility at CSUDH**

Access to publications, instructional material, computer software, hardware and electronic information, as well as access to the campus are critical for the educational and career achievement of all persons. CSU Dominguez Hills seeks to enable that access with this directory of information and services.

The policy of the CSU is to make its programs, services, and activities accessible to students, faculty, staff, and the general public who visit or attend a campus-sponsored event, with disabilities.

## **Instructor's Rights**

An instructor has the right to remove a student from class at any time he/she considers a student's actions to be interfering with a proper collegiate environment. The instructor may also refer the incident to the Director of Student Discipline & Student Life for disciplinary action as warranted.

## **Academic Honor Code**

Programming assignments must be done individually (otherwise mentioned by an instructor as a group assignment). Failure to do so will result in a violation of the CSUDH Academic Honor Code. The following cases will be considered as violations: identical code, and extremely similar code. Violations will be reported to the Office of Vice President of Academic Affairs.

## **Attendance Policy**

Students are expected to attend the classes, complete all requirements on time, and are responsible for all related material.

## **ADA Statement**

Students with disabilities, who believe they may need an academic adjustment in this class, are expected to contact me as soon as possible to better ensure receipt of timely adjustments.

## **Definition of Cheating and Plagiarism**

CSUDH is dedicated to a high standard of academic integrity among its faculty and students. In becoming part of the California State University academic community, students are responsible for honesty and independent effort. Disciplinary action will be taken against any student who alone or with others engages in any act of academic fraud or deceit. (Read University Regulations in University Catalog).

## **AMERICANS WITH DISABILITIES ACT:**

CSUDH adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with temporary and permanent disabilities. If you have a disability that may adversely affect your work in this class, I encourage you to register with Disabled Student Services (DSS) and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: no accommodation can be made until you register with the DSS. For information call (310) 243-3660 or to use the Telecommunications Device for the Deaf, call (310) 243-2028 or go to: <http://www4.csudh.edu/dss/>

## **COMPUTER INFORMATION LITERACY EXPECTATIONS**

It is expected that students will:

1. Use Microsoft Word for word processing unless otherwise approved by the instructor,

2. Be familiar with using email as a communication tool and check your official campus email account at least every other day;
3. Be able to access websites and online course materials which may require Flash and other plug-ins;
4. Use the library databases to find articles, journals, books, databases and other materials;
5. Be able to create an effective PowerPoint presentation;
6. Be able to record audio (ideally video) to share with the instructor via the web; and
7. Have regular access to a computer and internet access for the term of this course.

### **ACADEMIC INTEGRITY**

Academic integrity is of central importance in this and every other course at CSUDH. You are obliged to consult the appropriate sections of the University Catalog and obey all rules and regulations imposed by the University relevant to its lawful missions, processes, and functions. **All work turned in by a student for a grade must be the students' own work.** Plagiarism and cheating (e.g. stealing or copying the work of others and turning it in as your own) will not be tolerated, and will be dealt with according to University policy. The consequences for being caught plagiarizing or cheating range from a minimum of a zero grade for the work you plagiarized or cheated on, to being dropped from the course.

Students are reminded of the university policy with regard to scholastic honesty. In this course, submission for credit of any assignment, program, test, or examination that is not the student's original work or contains portions of someone else's work (friend/tutor) without being clearly and specifically identified as such, as well as cheating on tests or examination, are violations that will automatically result in an F grade in the course and university disciplinary action.

1. Do not show another student a copy of your homework or projects before the submission deadline.
2. Do not email your project to another student, even if they promise they will not copy it.
3. The penalties for permitting your work to be copied are the same as the penalties for copying someone else's work.
4. If you choose to do your work on your computer, make sure that your computer account is properly protected. Use a good password, and do not give your friends access to your account or your computer system.
5. Do not leave printouts, or thumb drives around a laboratory where others might access them.

**Electronics Device Usage:** During exams/quizzes using any kind of unapproved electronic device will result in automatic failure for the course (this includes checking messages on the phone from your friend); if there is an emergency inform the instructor. CSUDH Academic Integrity policies are listed in the Catalog. Students are supposed to know what they are, including definitions of cheating, plagiarism, and dishonesty. The following link can be referred for additional information: <http://www4.csudh.edu/student-rights/academic-integrity/>.

**Student Academic Appeal Process:** Authority and responsibility for assigning grades to students rest with the faculty. A grade appeal is permitted when a student can show clear evidence that a grade was contrary to procedures as specified in the course syllabus, was based on prejudice, was capricious, or was the result of a computational or clerical error. The presumption is that the grades assigned are correct until there is a clear demonstration otherwise. The burden of proof is heavy, and it rests with the student who is appealing.

**Incompletes:** The grade of I is intended for the rare circumstance when a student who has been successful in a class has an unexpected event occur shortly before the end of the class. I will not consider giving a student a grade of I unless the following three conditions have been met.

1. It is within two weeks of the end of the semester.
2. The student has a grade of C or better in the class.
3. The reason that the student cannot complete the class is properly documented and compelling.

### **Behavioral Standards**

Disruptions of class will not be permitted. Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. The instructor may require a student responsible for disruptive behavior to leave class pending discussion and resolution of the problem and may also report a disruptive student to the Student Affairs Office (WH A-410, 310- 243-3784) for disciplinary action. Examples of disruptive behavior include:

- o Being late to class regularly and distracting instructor and students.
- o Allowing a cell phone or pager to repeatedly beep audibly.
- o Playing music or computer games during class in such a way that they are visible or audible to other class members.
- o Exhibiting erratic or irrational behavior.
- o Behavior that distracts the class from the subject matter or discussion.
- o Making physical or verbal threats to a faculty member, teaching assistant, or class member.
- o Refusal to comply with faculty direction.
- o Performing a distracting repetitive act such as talking to others
- o Email harassment
- o Sleeping or reading a newspaper and/or magazine

The contents of course material provided by the instructor, the links contained therein directly and indirectly, and the contents of the said links, are copyrighted. They are provided exclusively for non-profit educational use by the students currently enrolled in this course and for the duration of this semester. No other use or any use by others is allowed without the authorization of the instructor in this course and the copyright holder(s). **No videotaping or recording** without instructors' prior permission is allowed in class.

## **COVID-19 Safety Procedures**

### **Guidance for Student Mask-Wearing:**

Face coverings are required for everyone both indoors and outdoors on the CSUDH campus, as they are essential to preventing the spread of COVID-19.

Face Covering Requirements:

- Face masks must cover both the nose and mouth.
- The covering must fit snugly against the sides of the face so there are no gaps.
- The university expects the Toro community to behave responsibly with respect for others.

You may take off your face covering when you are:

- Eating or drinking (maintaining six feet of distance from others)
- Alone in an office
- In your vehicle

Effective January 17, 2022, all CSUDH employees will be required to wear a well-fitting medical grade mask: surgical mask, KN95s or higher-level respirator such as an N95 filtering facepiece respirator while indoors or outdoors on campus. This is in accordance with the L.A. County Department of Public Health's January 5 These medical grade masks can be acquired from the locations listed below or employees can bring their own supply with them to campus. ***Cloth face masks will not be allowed while in the workplace.***

### **Face Covering Violation During Class**

a. Students who refuse to put on a face covering or to properly wear one may be asked to leave. If the faculty member isn't comfortable asking, then faculty may temporarily dismiss the class for an appropriate pause, or for the day if needed, and should report the non-compliant student to the Office of Community Standards: <https://www.csudh.edu/student-conduct/report-an-incident/>.

b. The non-complying student will not be permitted to attend class until they comply with the face-covering policy. They also may be disenrolled from the course, depending on the severity of the issue.

### **Student Conduct Procedures**

The Office of Community Standards (OCS) at CSUDH, should be consulted when all educational avenues have been exhausted and students repeatedly fail to comply with communicated campus safety protocols.

1) Student Conduct Code Violation Students failing to comply with the communicated campus safety protocols and procedures are subject to discipline pursuant to CSU Executive Order 1098: Student Conduct Code Procedures, (rev. 3/29/19). Title V of the California Code of Regulations Section 41301, Student Conduct Code, describes the grounds on which a student can be disciplined, including:

- Conduct that threatens or endangers the health or safety of any person within or related to the University community, including physical abuse, threats, intimidation, harassment, or sexual misconduct.”
- “Violation of any published University policy, rule, regulation or presidential order.”
- “Failure to comply with directions of, or interference with, any University official or any public safety officer while acting in the performance of his/her duties.” Students failing to comply with campus safety protocols and procedures, including in connection with on-campus instruction, are subject to discipline based on the above grounds.

### **Course policies:**

- Deliverables (class Assignments, Projects) submitted **late are not accepted** without obtaining instructors' permission prior to the due date. **Email late assignments** to the instructor **will not be graded**.
- Deliverables (class Assignment, Projects) not submitted before the end of the final class will earn 0%.
- Any exceptional, non-academic circumstances need to be discussed with the instructor as soon as they arise, prior to the due date of the deliverable. At the time of the discussion, **NO make-up** work will be assigned.
- The instructor reserves the right not to award credit for deliverables that are incomplete. Partial credit is awarded at the instructor's discretion, and only for work that merits such an award.
- Assignments that are incomplete or incongruous with the specifications may be returned to the student.
- Students shall not make any recording (audio or video) of a classroom lecture without having obtained prior written permission from the instructor
- Students are not allowed to take photos from the paper exams during the exam results review in the classroom or in the office.
- Extra Credit: The instructor may assign extra credit assignments or projects at any point during the semester.
- Unless otherwise stated during the semester, **class attendance is required and in person**.

**Exams and projects:** There will be two exams. The **first exams** will be given during the **7<sup>th</sup> week**, the **final exam** will be given on **May 7<sup>th</sup>, 2023**. The exams will be closed book/notes and include material from the book and lectures. Students are responsible for any and all materials that will be presented in the lecture and textbook. **No makeup or early exams will be administered;** unless there are serious, unforeseen, and unavoidable circumstances and the student notifies the instructor as soon as possible.

For the online exam, you need to answer your questions on paper (paper-based) with the **camera ON** and **having an appropriate distance from the webcam that shows you are only writing on paper and nothing else**. More details and policies will be provided before the exams.

In the open-book exam, you are allowed to use books/internet during the exam.

The midterm and final exams' format will be announced later.

For selected research papers, a **group study and discussion** project will take place. Each group must submit and discuss an outcome of their reading in class based on provided dates.

If every member of the team does a similar amount of work, every member of the team will receive the same grade. However, if the instructor perceives that there is an inequitable workload, then individual team members may receive more points, or fewer points, than other members. The decision to adjust the point distribution within a team is reserved for the instructor's discretion.

### **GRADING:**

The weighting of the coursework is listed below:

- **Midterm exam 30%**
- **Final Exam 30%**
- **Assignments 10 %**
- **Group study and discussion project 30%**

### **GRADES:**

The following grading scale will be used:

Percent	Grade
92% - 100%	A
88% - 91%	A-
84% - 87%	B+
80% - 83%	B
75% - 79%	B-
70% - 74%	C+
65% - 69%	C
60% - 64%	C-
55% - 59%	D+
50% - 54%	D
<50%	F

### **\* Planned Topics and tentative schedule**

Week	Topic	Class Activity	
1	January 22	Cryptography	Cryptography- paper 1
2	January 29	Cryptography	
3	February 5	Advanced Cryptography	Cryptography- paper 2
4	February 12	Advanced Cryptography	Presentation (paper1)
5	February 19	Network security	Network security- paper 3
6	February 26	Network security	Presentation (paper2)
7	March 5	Midterm (30%)	Presentation (paper3)
8	March 12	Banking and bookkeeping	Banking- paper 4
9	March 19	Banking and bookkeeping	
10	March. 26	Spring Recess	
11	April 2	Biometrics	Biometrics- Paper 5
12	April 9	Biometrics	Presentation (paper4)
13	April 16	Phone	Phone- paper 6
14	April 23	Phone	Presentation (paper5)
15	April 30	review	Presentation (paper6)
16	May 7	Final exam (30%)	

\* Planned topics will be conducted according to the above table. However, the schedule of the topics schedule or timetable may be varied)