California State University
DOMINGUEZ HILLS

College of Natural and Behavioral Sciences
Department of Computer Science
http://csc.csudh.edu

COURSE TITLE:	Wireless Security and Forensics
COURSE NUMBER:	**CTC 454**
INSTRUCTOR NAME:	**MEHRDAD S. SHARBAF, PH.D.** **MSHARBAF@CSUDH.EDU,** **OFFICE: NSM A-139** **PHONE: 310-243-3398, OFFICE HOURS: WED-5:00PM-7:00PM**
DATE:	SPRING SEMESTER, 2023
COURSE LENGTH:	**15 WEEKS**
BLACKBOARD WEB SITE	**HTTP://toro.csudh.edu**
COURSE SCHEDULE:	W→ 7:00pm-9:45pm --Campus
UNIT OF ACADEMIC MEASUREMENT (SELECT ONE):	**___ QUARTER SYSTEM** **__X SEMESTER SYSTEM**
PREREQUISITES:	**CSC116, CTC228**
COURSE DESCRIPTION:	This course focuses on the wireless LAN technology. The course covers fundamental topics, such as planning, designing, installing, securing, and configuring wireless LANs. It also details common wireless LAN uses including maintenance, security, and business applications. The students are exposed to different tools related to wireless security and forensics. Also course covers the basic concepts of mobile device forensics, and describes procedures for acquiring data from cell phones and mobile devices. The purpose of this course is to provide a broad survey of wireless communications including in-depth coverage of protocols, transmission methods, mobile forensics, and IEEE wireless standards. Many hands-on exercises are included, which allow students to practice skills as they are learned.

	TEXTBOOKS AND MATERIALS	(CHECK ONE)	
		REQUIRED	OPTIONAL (SUPPLEMENTAL)
TEXTBOOK (S)	NAVIGATE eBOOK ACCESS FOR WIRELESS AND MOBILE DEVICE SECURITY WITH CLOUD LABS SECOND EDITION JIM DOHERTY ISBN: 9781284228472 | © 2022 Lab Course ID: **B35A95** **Discount Code 20%: CSUDHCYBR** Please apply the code to get a discount at the checkout process https://www.jblearning.com/catalog/productdetails/9781284228472	✓	
References	HAND OUT	✓	
RESOURCES & SUPPLIES	An Internet browser (e.g. Internet Explorer), connection to the Internet. A storage device for your files (Flash Drive).	✓	

PERFORMANCE OBJECTIVES: **Upon completion of this course, the student should be able to do the following:**

- Explain how the major wireless technologies are used today
- List and explain the advantages of wireless technology
- Describe the different types of wireless attacks
- List the legacy IEEE security protections

- Explain the vulnerabilities of wireless transmissions
- Describe the encryption and authentication features of IEEE 802.11i/WPA2
- List the features of wireless intrusion detection and wireless intrusion prevention systems
- Explain the features of wireless security tools
- Explain the basic concepts of mobile device forensics
- Describe procedures for acquiring data from cell phones and mobile devices

INSTRUCTIONAL METHODS:

✓ This course will be delivered through the use of lecture, presentations, demonstrations, and limited hands-on experience.

GRADING:

Student performance will be evaluated based upon the following criteria: Evaluation of the course will include any class assignments or deliverable exercises, and the projects. The instructor will supply the students with a full grading scheme at the beginning of the course.

Midterm	**100**
Final Exam	**100**
Group Labs	**200**
Class Activity	**200**
Group Case Analysis Report	**100**
Total:	**700**

Grading Scheme:

96-100%	A	73-76%	C
90-95%	A-	70-72%	C-
87-89%	B+	67-69%	D+
83-86%	B	61-66%	D
80-82%	B-	< 60%	F
77-79%	C+		

COURSE POLICIES: **Late and Incomplete Deliverables:**

- Deliverables (Class Assignments, Projects) submitted late are not accepted.
- 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.

ATTENDANCE: Students are required to be prepared and attend all classes. The attendance policy is strictly enforced, and poor attendance may adversely affect your final grade due to class assignments.

MAKE-UP WORK:	There will be no makeup or early examinations and late assignments will not be accepted.
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 student" 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.
ADA STATEMENT:	Students with disabilities, who believe they may need an academic adjustment in this class, are encouraged to contact Disabled Student Services as soon as possible to better ensure receipt of timely adjustments.
MIDTERM & FINAL EXAM:	Midterm is during the 8th week of the class and the date for the final exam is based on the final examination schedule printed in the campus Class Schedule. All projects are due no later than the last week of the semester.

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.*

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Tentative Course Schedule

Week #	Date	Topic	Reading Assignment/ Computer Lab Topic/In Class Assignments
Week 1	1/25/2023	The Evolution of Data and Wireless Networks	Week 1-Chapter 1
Week 2	2/1/2023	The Mobile Revolution	Week 2-Chapter 2
Week 3	2/8/2023	Anywhere, Anytime, on Anything: "There's an App for That!"	Week 3-Chapter 3
Week 4	2/15/2023	Security Threats Overview: Wired, Wireless, and Mobile	Week 4-Chapter 4
Week 5	2/22/2023	WLAN Security	Week 5-Chapter 5
Week 6	3/1/2023	WLAN and IP Networking Threat and Vulnerability Analysis	Week 6-Chapter 6
Week 7	3/8/2023	Basic WLAN Security Measures	Week 7-Chapter 7
Week 8	3/15/2023	**Midterm**	Week 8-**Midterm Exam covers Chapters 1-7**
Week 9	3/22/2023	Advanced WLAN Security Measures	Week 9-Chapter 8
	3/282023	**Spring Recess-No Classes**	
Week 10	4/5/2023	WLAN Auditing Tools	Week 10-Chapter 9
Week 11	4/12/2023	WLAN and IP Network Risk Assessment	Week 11-Chapter 10
Week 12	4/19/2023	Mobile Forensics	Week 12-Handout
Week 13	4/26/2023	Mobile Forensics	Week 13-handout
Week 14	5/3/2023	Mobile Wireless Attacks and Remediation/ Fingerprinting Mobile Devices	Week 14-Chapter 13-14
Week 15	5/10/2023	Group Case Analysis Presentation	Week 15-**Due for Group Labs Project Report /Group Case Analysis Report**
Week 16	5/17/2023	**Final Exam Week**	**Final Exam covers Chapters 8-10, 13,14, and mobile forensics**

GO TOROS!