

CYB 552- Advanced Hacking Prevention Fall 2021

Instructor	Dr. Bhriugu Celly.	E-Mail	bcelly@csudh.edu
Classroom	Alternate Instructions	Class Time	SU 5:00pm-8:00pm
Office		Office Hours	By Appointment
Phone	(310) 243-3398	URL	http://csc.csudh.edu

COURSE DESCRIPTION:

To evaluate advanced “hacks” and methods of defense fortification. This course provided advanced network defense concepts and techniques. It examines theoretical concepts that make the world of networking unique. This course also adopts a practical hands-on approach when examining network defense techniques and different strategies. Topics include accessing, manipulating, and exploiting the network.

PRE-REQUISITE: Graduate Standing, Consent of Instructor.

TEXTBOOKS :

Hacker Techniques, Tools, and Incident Handling Navigate 2
eBook with Virtual Security Cloud Lab

Third Edition

Sean-Philip Oriyano; Michael G. Solomon, PhD, CISSP, PMP, CISM



The code is ISSADIGITA for 15% Discount and here is the link <https://www.jblearning.com/catalog/productdetails/9781284172614>

Registered students will access the course materials through Toro Blackboard.
Supporting handout materials to be posted in the Toro Blackboard.

COURSE GOALS:

- The course covers fundamental areas of fortifying your network defenses.

- The course explores methods of developing a secure baseline and how to “harden” your enterprise architectures from the most advanced attacks.
- The Virtual Security Lab intensive environment gives each student in-depth knowledge and practical experience with the current essential security systems.

COURSE OUTCOMES:

Upon completing this course students will be able to:

- To evaluate advanced “hacks” and methods of defense fortification
- To understand how intruders escalate privileges.
- To understand Intrusion Detection, Policy Creation, Social Engineering, DDoS Attacks, Buffer Overflows and Virus Creation.
- To understand Ethical Hacking.
- To examine theoretical concepts that makes the world of networking unique.

STUDENT ACADEMIC APPEALS PROCESS

Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, error, or unfairness of any kind may have adversely affected the instructor’s assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

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.

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.

COURSE POLICIES:

- 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.

MIDTERM & FINAL EXAM:

Midterm exam 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.

No makeup or early exams will be administered.

GRADES:

The following grading scale will be used:

Score	Grade	Score	Grade
94-100	A	91-93	A-
88-90	B+	84-87	B
81-83	B-	78-80	C+
74-77	C	71-73	C-
68-70	D+	64-67	D
0-63	F		

GRADING:

The weighting of the coursework is listed below:

Midterm	100
Final Exam	200
Hands-On Labs Projects	200
Research Propose Plan with Annotated Glossary	50
Research Project Report	150
Research Project Presentation	100
Discussions	200
Total:	1000

TOPIC OUTLINE (Will be conducted according the following. However, the schedule of the topics schedule or timetable may be varying slightly)

[Tentative Course Schedule](#)

WEEK #	DATE	TOPIC	<i>Reading Assignment/ Computer Lab Topic/In Class Assignments</i>
Week 1	8/22/2020	Course Introduction & Requirements/ Overview of References, Basecamp /	
Week 2	8/29/20	Hacking: The Next Generation	Chapter 1 Discussion: Hacker Motives Lab 1: Assessing and Securing Systems on a Wide Area Network (WAN)
Week 3	9/5/2020	TCP/IP Review	Chapter 2 Discussion: TCP/IP and the OSI Model Lab 2: Applying Encryption and Hashing Algorithms for Secure Communications
Week 4	9/12/2020	Cryptographic Concepts	Chapter 3 Discussion: Encryption Technologies Lab 3: Data Gathering and Footprinting on a Targeted Website
Week 5	9/19/2020	Physical Security	Chapter 4 Discussion: Biometric Controls Lab 4: Using Ethical Hacking Techniques to Exploit a Vulnerable Workstation
Week 6	9/26/2020	Footprinting Tools and Techniques	Chapter 5 Discussion: Information Exposure Countermeasures Lab 5: Auditing a Wireless Network and Planning for a Secure WLAN Implementation

Week 7	10/3/20	Port Scanning	Chapter 6 Discussion: Port Scanning Countermeasures Lab 6: Attacking a Vulnerable Web Application and Database
Week 8	10/10/20	Enumeration and Computer System Hacking	Chapter 7 Discussion: Enumeration and Security Policy Lab 7: Identifying and Removing Malware on a Windows System
Week 9	10/17/20	Midterm	Covers Chapters 1-7, Due for Research Proposal
Week 10	10/24/20	Wireless Vulnerabilities	Chapter 8 Discussion: Security Features of Wireless Technologies Lab 8: Analyzing Network Traffic to Create a Baseline Definition
Week 11	10/31/20	Web and Database Attacks	Chapter 9 Discussion: Secure Web Applications Lab 9: Investigating and Responding to Security Incidents
Week 12	11/7/20	Malware	Chapter 10 Discussion: Scareware versus Ransomware Lab 10: Securing the Network with an Intrusion Detection System (IDS)
Week 13	11/14/20	Sniffers, Session Hijacking, and Denial of Service Attacks	Chapter 11 Discussion: Network Sniffing: Ethics and Other Issues
Week 14	11/21/20	Research Project Presentation	<i>Due for Project Report, Presentation, Lab Report</i>
Week 15	11/30/20	Thanksgiving Holidays-No Classes	
Week 16	12/5/20	Final Exams Week	The Final Exam covers all the Handouts



GO TOROS!