California State University
DOMINGUEZ HILLS

WWW.CSUDH.EDU

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

COURSE TITLE:	Network Security & Hacking Prevention
COURSE NUMBER:	**CTC 452**
INSTRUCTOR NAME:	**MEHRDAD S. SHARBAF, PH.D.** MSHARBAF@CSUDH.EDU, **OFFICE: ROOM SAC1115, PHONE: 310-243-3398, OFFICE HOURS: TBA**
DATE:	FALL SEMESTER, 2016
COURSE LENGTH:	**_15_ WEEKS**
WEB COMPANION	**N/A**
BLACKBOARD WEB SITE	**HTTP://toro.csudh.edu**
COURSE SCHEDULE:	Sat → 9:00am-11:45am Session 1
UNIT OF ACADEMIC MEASUREMENT (SELECT ONE):	**___ QUARTER SYSTEM** **__X SEMESTER SYSTEM**
PREREQUISITES:	CSC 428 Operating System Security or consent of instructor. Students should also be familiar with computer networking, specifically the TCP and IP protocols, but this material will be reviewed as part of this course.
COURSE DESCRIPTION:	This course takes an in depth look at 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.

	TEXTBOOKS AND MATERIALS	(CHECK ONE)	
		REQUIRED	OPTIONAL (SUPPLEMENTAL)
TEXTBOOK (S)	 • Guide to Network Defense and Countermeasures, 3rd Edition • Randy Weaver • Dawn Weaver • Dean Farwood • ISBN-10: 1133727948 • ISBN-13: 9781133727941 • 576 Pages Paperback	✓	
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:

- ✓ Describe common attack threats
- ✓ Describe the network security components that make up a layered defense configuration
- ✓ List the essential activities that need to be performed in order to protect a network
- ✓ Decide how to minimize risk in a network
- ✓ Explain what makes an effective security policy
- ✓ Explain the "what, why, and how" of virtual private networks (VPNs)
- ✓ Design common firewall configurations

- ✓ Establish a set of application rules and restrictions for a firewall
- ✓ Describe intrusion detection system components
- ✓ Understand options for configuring intrusion detection systems
- ✓ Know the issues involved in choosing an intrusion detection system

INSTRUCTIONAL METHODS:

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

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.

Quizzes	**100**
Test I, and II	**200**
Final Exam	**200**
Group Project/Class Activity	**300**
Group Project Presentation	**100**
Total:	**900**

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.

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.

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.

QUIZZES:

Quizzes will be given throughout the semester, at a rate of approximately 1 per chapter. Quizzes will always cover the material covered since the last Quiz or Exam. The quizzes will be combinations of objective and multiple choice questions. Makeup quizzes will not be given. Any class material missed by the student is the student's responsibility to acquire.

MIDTERM & FINAL EXAM:

Test is during the 8th, and 14 th 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.

Tentative Course Schedule

WEEK #	DATE	TOPIC	*Reading Assignment/ Computer Lab Topic/In Class Assignments*
Week 1	8/20/2016	Course Introduction & Requirements/ Overview of References, Blackboard/Network Security Fundamentals	Chapter 1
Week 2	8/27/16	TCP/IP	Chapter 2/ Quiz 1/Project Activity
Week 3	9/3/16	Network Traffic Signature	Chapter 3/Quiz 2 /Project Activity
Week 4	9/10/16	Routing Fundamentals	Chapter 4/Quiz 3/ Project Activity
Week 5	9/17/16	Cryptography	Chapter 5/Quiz 4/ Project Activity
Week 6	9/24/16	Intrusion Detection and Prevention Systems	Chapter 8/Quiz 5/ Project Activity
Week 7	10/1/16	Firewalls	Chapter 9/ Quiz 6**/** Project Activity
Week 8	10/8/16	**Test I**	Covers Chapters 1-5, and 8-9
Week 9	10/15/16	Review Test I , Firewall Design and Management	Chapter 10 / Project Activity
Week 10	10/22/16	VPN Concepts	Chapter 11/Quiz 7/ Project Activity
Week 11	10/29/16	Internet and World Wide Web Security	Chapter 12/Quiz 8/Project Activity
Week 12	11/5/16	Security Policy Design and Implementation	Chapter 13/Quiz 9/Project Activity
Week 13	11/12/16	Ongoing Security Management	Chapter 14/ Quiz 10/Project Activity
Week 14	11/19/16	**Test II**	Covers Chapters 10-14- Project Activity
	11/26/16	**Thanksgiving Holidays-No Classes**	
Week 15	12/3/16	Group Project Presentation	***Due for Group Project Activity***
Week 16	12/10/2016	**Final Exams Week**	**The Final Exam covers chapters 1-14, except chapters 6,7**

GO TOROS!