

Fundamentals of Network Security

Fall 2005 Aug. 15 – Dec. 15 (18 weeks)

Course	CS 187A 4.0 units
Classroom	Bldg 6, Room 6106
Lecture	Mondays, 7:00pm - 8:30pm
Lab	Mondays, 8:30pm - 9:50pm
Prerequisites	Students should be comfortable using Windows client operating systems and be familiar with general networking concepts.
Advisory	CS 180 Network Operating Systems
Textbook	<i>Security+ Guide to Network Security Fundamentals, 2ed.</i> Course Technology, 2005 ISBN 0619215666
Recommended Reading	<i>Security+ Exam Cram</i> Que Publishing, 2003 ISBN 0789729105 <i>Hacking Exposed</i> McGraw-Hill Osborne Media, 2003 ISBN 0072227427
Tests	4 quizzes; multiple-choice, open book, take home. In-class comprehensive final; multiple-choice, closed book.
Extra Credit	Short take-home projects will be available for optional extra credit.
Instructor	Rob Lemaster
Email	RLemaster@Ohlone.edu
Web Site	http://www2.ohlone.edu/people/rlemaster
WebCT	This class is web enabled. Students will need to register for a WebCT account at the link below to have access to course materials. http://online.ohlone.edu
Objectives	Preparation for passing the CompTIA Security+ certification exam. Foundation for further study towards the SSCP, CISSP, and other information security certifications.
Overview	This course is designed to provide you with a fundamental understanding of network security principles and implementation. You will learn about the technologies used and principles involved in creating a secure computer networking environment. You will learn about authentication, the types of attacks and malicious code that may be used against your network, the threats and countermeasures for e-mail, web applications, remote access, and file and print services. A variety of security topologies are discussed as well as technologies and concepts used for providing secure communications channels, secure internetworking devices, and network medium. You will learn about intrusion detection systems, firewalls, and physical security concepts. In addition, security policies, disaster recovery, and computer forensics are covered. Aside from learning the technologies involved in security, you will get to understand the daily tasks involved with managing and troubleshooting those technologies. You will have hands-on and case project assignments that reinforce the concepts you read in each chapter.
Certification Waiver	If the student passes the Security+ certification during the period of the semester, he/she will receive an automatic "A" for the course. Documentation will need to be presented to the instructor before grades are awarded.

Grading

<u>Weight</u>	
Quizzes	50%
Labs	20%
Final	30%
Total	100%

Scale

90 - 100	= A
80 - 89	= B
70 - 79	= C
60 - 69	= D
< 59	= F

Course Outline (subject to change)

Date	Topic	Reading	Labs
8/15	Introduction & Security Overview	Textbook Ch.1	Film: "Hackers" (PBS/Frontline Documentary)
8/22	Cracking & Attacks	Textbook Ch.2	Textbook Hands-On Projects 1-1, 1-2, 1-3, 1-4
8/29	Viruses & Malware	Textbook Ch.2	Textbook Hands-On Projects 2-1, 2-2, 2-3, 2-4
9/5	<i>Labor Day Holiday – no class</i>		
9/12	Access Control & Authentication	Textbook Ch.3	Textbook Hands-On Projects 3-1, 3-2, 3-4, 3-5, 3-6
9/19	Security Baselines & Hardening	Textbook Ch.4	Textbook Hands-On Projects 4-1, 4-2, 4-3, 4-4, 4-5
9/29	Network Security Topologies	Textbook Ch.5	Textbook Hands-On Projects 5-1, 5-2, 5-3
10/3	Network Firewalls & Proxy Servers	Textbook Ch.5	Supplemental Lab: Netbus/Fport
10/10	Intrusion Detection & Honeypots	Textbook Ch.5	Supplemental Lab: Snort, IDSCenter, BOF
10/17	Web Security Wireless & Instant Messaging	Textbook Ch.6	Textbook Hands-On Projects 6-1, 6-2, 6-3, 6-4
10/24	Email Security, Spam	Textbook Ch.6	Supplemental Lab: Desktop Scout, Keylogger, Spybot
10/31	Remote Access, VPN	Textbook Ch.7	Textbook Hands-On Projects 7-1, 7-2, 7-3
11/7	Cryptography & PKI	Textbook Ch.8,9	Textbook Hands-On Projects 8-1, 8-2, 8-4, 9-1
11/14	Physical & Technical Security	Textbook Ch.10	Supplemental Lab: Nmap
11/21	Disaster Recovery & Business Continuity	Textbook Ch.10	Textbook Hands-On Projects 2-1, 10-2
11/28	Risk Management	Textbook Ch.11	Textbook Hands-On Projects 11-2, 11-3
12/5	Forensics & Incident Response	Textbook Ch.13	Textbook Hands-On Projects 13-1, 13-2, 13-3, 13-4, 13-5
12/12	In-class final exam (comprehensive, closed book)	Textbook Chs.1-13	n.a.