COURSE SYLLABUS

COM 302 Network Security for Software Developers

Course Description

An introduction to common network security issues to include authentication, attacks and malicious code; remote access, Web and e-mail security, wireless networking, instant messaging, network devices, network security topologies, cryptography and disaster recovery.

General Course Information

Number of Units/Weeks	10-Apr
#Hours Lecture/#Hours Laboratory/#Hours HW*	40/0/80
Prerequisite(s)	None
Co-requisites (s)	None
Course Developer(s)	Scott Green, BA
Date Approved / Last Review	Feb 2009 / October 2014

* Homework

Learning Outcomes

Upon successful completion of the course, students will be able to:

Discuss common methods of attack and take appropriate actions to reduce the risk.

Recognize common types of attack methods and take appropriate actions to mitigate vulnerabilities and risks.

Discuss the basic concept of Access Control.

Discuss the concept of basic cryptography and how to apply cryptography in a business environment

Instructional Methods Employed in this Course

Lecture and reading assignments
Hands-on exercises and labs
Research
Student presentations
Practical application of theory and skills in authentic projects
Build on prior knowledge and experience of students to enhance richness of class activities

Information Resources for this Course

Textbook

Ciampa, M. Security+ Guide to Network Security Fundamentals, 3rd Edition. Florence, KY: Cengage Learning, (2009). Bundle with Lab Manual (see below) ISBN-13: 978-1-4283-4066-4.

Cretaro, Paul. Lab Sim for Ciampa's Security+ Guide to Network Security Fundamentals, 3rd Edition. Florence, KY: Cengage Learning. (2010). See bundled ISBN above.

Other Materials

USB thumb drive

Drawing tools

Add text

Web Site Readings

Introduction to Network Security

Curtin, Matt. Introduction to Network Security.
http://www.interhack.net/pubs/network-security/
(Retrieved 19 January 2009)

Encryption

Microsoft. Description of Symmetric and Asymmetric Encryption.
http://support.microsof24+t.com/kb/246071
(Retrieved 19 January 2009)

Tyson, Jeff. How Encryption Works.
http://computer.howstuffworks.com/encryption.htm
(Retrieved 19 January 2009)

University of Maryland, Baltimore County. Encryption.
http://www.cs.umbc.edu/~wyvern/ta/encryption.html
(Retrieved 19 January 2009)

Wikipedia. Encryption.
http://en.wikipedia.org/wiki/Encryption
(Retrieved 19 January 2009)

Attack Methods

Edwards, Mark Joseph. Combined Attack Methods.
http://windowsitpro.com/WindowsSecurity/Article/ArticleID/43130/WindowsSecurity_43130.html
(Retrieved 19 January 2009)

Info Security Lab. Internet Attack Methods.
http://www.contactomagazine.com/computers/internetattacks1007.htm
(Retrieved 19 January 2009)

Raywood, Dan. Phishing Goes Back to Basics for Attack Methods.
http://www.scmagazineuk.com/Phishing-goes-back-to-basics-for-attack-methods/article/119729/
(Retrieved 19 January 2009)

Sagar, Anil and Sabyasachi Chakrabarty. Common Attack Methods.
http://www.cert-in.org.in/knowledgebase/presentation/Commonattackmethods.pdf
(Retrieved 19 January 2009)

Security Threats

Davis, Lidija. Top Online Security Threats for 2009.
http://www.readwriteweb.com/archives/top_online_security_threats_for_2009.php
(Retrieved 19 January 2009)

Higdon, Jim. Top IT Security Threats of 2008.
http://www.itsecurity.com/features/Top-IT-012308/
(Retrieved 19 January 2009)

Search Security.com. Security Topics.
http://searchsecurity.techtarget.com/topics/0,295493,sid14_tax299811,00.html
(Retrieved 19 January 2009)

CIA Triangle

American University, Kogod School of Business. Little Black Book of IT Management: Security.
http://itec711.wikidot.com/security
(Retrieved 19 January 2009)

Arakelian, Bob. Early Beginnings and a Definition of Information Security.
http://www.eplansolutions.com/id75.html
(Retrieved 19 January 2009)

Whitman, Michael and Herbert Mattord. Management of Information Security, Chapter 1.
http://209.85.173.132/search?q=cache:JH9auzI8SP4J:
www.sis.pitt.edu/~jjoshi/IS2820/Spring06/chapter01.doc+cia+triangle&hl=en&ct=clnk&cd=3&gl=us
(Retrieved 19 January 2009)

Table/Topics & Assignments

Types of Assignments:
Lecture: Considered Lecture Hours
Classroom Discussion: Considered Lecture Hours
In Class Critique: Considered Lecture Hours
Delivering Oral Presentations: Considered Lecture Hours
In Class (IC) Exercise: Considered Lecture Hours
Reading: Considered Homework (HW), work done outside of class.
WebClass lesson (non-online courses): Considered HW, work done outside of class
Lab Work: Considered Lab Hours
Quiz, Midterm or Final: Considered Lecture Hours

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 1A	Introduction to Security System, Threats and risks	4				
HW 1A	Read chapters 1 & 2 (25 pages). Evaluated in HW 1B			2.5		
HW 1B	Review Questions, chapters 1 & 2			2.5	20	Week 2
HW 1C	Writing Assignment: Pick a small business model. What are the system threats and risks to be considered – 2 Pages, 2 Ref's.			2	40	Week 2

HW 1D	Lab Manual Exercises 1.1, 1.2, 1.3, 1.4, 1.5			4		
Total Week 1		4	0	11	60	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 2A	Protecting Systems: Network Vulnerabilities and Attacks	4				
HW 2A	Read chapters 3 & 4 (50 pages). Evaluated in HW 2B			5		
HW 2B	End of chapter review questions, chapters 3 & 4			2.5	20	Week 3
HW 2C	Writing Assignment: Different Types of System Attacks. 2 pages, 2 refs.			2	50	Week 3
Total Week 2		4	0	9.5	70	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 3A	Network Defenses, Wireless Network Security	4				
HW 3A	Read chapters 5 & 6 (50 pages). Evaluated in HW3B			5		
HW3B	Chapter review questions, chapters 5 & 6			2.5	20	Week 4
HW 3B	Writing Assignment: From both the student and security professional viewpoints, discuss the wired and wireless security at Coleman. 4 pages, 4 refs.			4	50	Week 4
Total Week 3		4	0	11.5	70	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 4A	Discussion	1				
Exam 4A	Midterm exam	3			300	Week 4
HW 4A	Midterm preparation. Evaluated by Midterm			5		
Total Week 4		4	0	5	300	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 5A	Access Control Fundamentals, Authentication	4				
HW 5A	Read chapters 7 & 8 (50 pages). Evaluated in HW2B			5		
HW 5B	Chapter review questions, chapters 7 & 8			2.5	20	Week 6
Total Week 5		4	0	7.5	20	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 6A	Performing vulnerability assessments	4				
HW 6A	Read chapter 9 (20 pages). Evaluated in HW 6B			2		
HW 6B	Chapter review questions, chapter 9			2.5	20	Week 7
HW 6C	Writing Assignment: Discuss the different types of network attacks. 4 pages, 4 refs.			4	50	Week 7
Total Week 6		4	0	8.5	70	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 7A	Conducting security audits	4				
HW 7A	Read chapter 10 (20 pages). Evaluated in HW7B			2		
HW 7B	Chapter Review Questions, chapter 10			2.5	20	Week 8
Total Week 7		4	0	4.5	20	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 8A	Basic Cryptography, Applying Cryptography	4				
HW 8A	Read chapters 11 & 12 (55 pages). Evaluated by HW8B			5.5		
HW 8B	Chapter review questions, chapters 11 & 12			2.5	20	Week 9
Total Week 8		4	0	8	20	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 9A	Business Continuity, Security Policies and Training	4				
HW 9A	Read chapters 13 & 14 (60 pages). Evaluated by HW9B			2.5		
HW 9B	Chapter review questions, 13 & 14			2.5	20	Week 10
HW 9C	Writing Assignment: How to improve the security posture of a given organizational scenario. 4 pages, 4 refs.			4	50	Week 10
Total Week 9		4	0	9	70	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 10A	Course wrap-up, discussion	1				

Exam 10A	Final exam	3			300	Week 10
HW 10A	Final preparation. Evaluated in Final exam.			8		
Total Week 10		4	0	8	300	

Course Hours Summary

Week	Topic	LEC Hours	LAB Hours	HW Hours
1		4	0	11
2		4	0	9.5
3		4	0	11.5
4		4	0	5
5		4	0	7.5
6		4	0	8.5
7		4	0	4.5
8		4	0	8
9		4	0	9
10		4	0	8
Total		40	0	82.5

Table/Point Breakdown

Assignment Type	Possible Points	Percentage of Grade
Graded homework	160	16%
Midterm	300	30%
Final	300	30%
Writing assignments	240	24%
Total	1000	100%

Your Grades for this Course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity.

Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

Coleman University Grade Assignment Policy:

Percent	Letter Grade	Grade Points
94-100	A	4
90-93	A-	3.67
87-89	B+	3.33
84-86	B	3
80-83	B-	2.67
77-79	C+	2.33
74-76	C	2
70-73	C-	1.67
67-69	D+	1.33
64-66	D	1
60-63	D-	0.67
N/A	INC	0
N/A	W	0
60 or above	CR	0
59 or below	NC	0
N/A	I	0
N/A	W	0
N/A	AU	0
N/A	TR	0
N/A	WV	0

Legend	
CR = Credit	NC = No Credit
I = Incomplete	Withdrawal
AU = Audit	TR = Transfer Credit
WV = Waiver	

Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.

After the academic accommodations have been determined, the students' instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures.