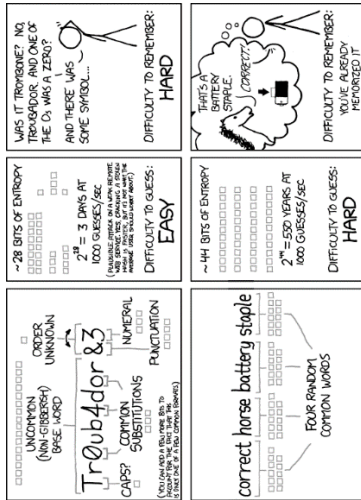


OTTERBEIN UNIVERSITY
DEPARTMENT OF MATHEMATICAL SCIENCES

COMP 4270
Computer and
Information Security
Spring Semester 2015



Class	MW 12:15 - 1:25 p.m. in Library 127
Lab	TR 12:00 – 1:45 p.m. in Towers 127/107B
Class Web Page	http://faculty.otterbein.edu/DStucki/COMP4270/
Instructor	David J. Stucki
Office	Towers 133
Office Hours	MW 3:00 - 4:00, F 12:30 – 1:30, or by appointment
Email	DStucki@otterbein.edu
Phone	823-1722
Home Phone	878-8002 (After 9 a.m. and before midnight , please)
Virtual Lab Code	5409

Description

Foundations of modern computer and information security, including software security, operating system security, network security, applied cryptography, human factors, authentication, anonymity, and web security. [4 semester hours credit]

Prerequisites

COMP 2500

Course Objectives

1. You will be able to explain the concepts of information systems security as applied to an IT infrastructure.
2. You will be able to describe how malicious attacks, threats, and vulnerabilities impact an IT infrastructure.
3. You will be able to explain the role of access controls in implementing a security policy.
4. You will be able to explain the role of operations and administration in effective implementation of security policy.
5. You will be able to explain the importance of security audits, testing, and monitoring to effective security policy.
6. You will be able to describe the principles of risk management, common response techniques, and issues related to recovery of IT systems.
7. You will be able to explain how businesses apply cryptography in maintaining information security.
8. You will be able to analyze the importance of network principles and architecture to security operations.
9. You will be able to explain the means attackers use to compromise systems and networks and defenses used by organizations.
10. You will be able to apply international and domestic information security standards and compliance laws to real-world implementation in both the private and public sector.

Program Learning Goals or Outcomes

- We have defined a set of 11 Student Learning Outcomes (SLO) for the Computer Science major. Your work in this course contributes to the following SLOs:
3. Students understand the recurring themes of abstraction and computation.
 7. Students can independently learn and apply new methods and tools.
 8. Students can effectively present a curricular topic to an audience.
 11. Students recognize the unique ethical responsibilities of computer scientists and are familiar with the ACM Code of Ethics and Professional Conduct.

Work Load "Students are expected to spend three hours per week (including class hours) in study for each semester hour of credit attempted." (Otterbein College Bulletin) Since COMP 4270 is 2 Semester Hours, 84 hours of study is expected: 42 hours in class (6 hours per week in lecture and lab), and **42 hours beyond class hours** (6 hours per week).

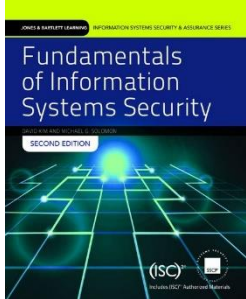
Participation We pose and solve problems in a social context. Therefore, we need each other. This need is the reason we have classroom and lab sessions. **Attendance is required.** Each time you are absent without *advance* permission, you will lose 1% of your grade up to a maximum of 3% (taken from the participation category). Each student is expected to participate in the class discussions throughout the semester. To this end, all assigned readings for each day should be completed before the class period in which they are discussed.

Submissions All submissions (lab reports, homework, and any extra credit reports) must be word processed unless specifically told otherwise. Submissions should be formatted in a professional manner. Headers and/or footers should be used for identifying what the submission is for, who is submitting it, and the page number for each page. Failure to properly format the submission will result in a 5% deduction.

Exam There will be a final. This will be closed-book. It will cover lecture material, readings, homework, and questions regarding the lab exercises. Make-ups will be scheduled only for documented emergencies. If you can document that you have three or more exams on the same day I will attempt to arrange for an alternate time *only* if given at least a week's notice.

Labs We will have regular laboratory assignments. *Additional lab time may be required outside of class time to complete the exercises, depending on the individual student's working style and experience.* I often hear of students spending an hour or more trying to do one step that they were confused about. **Work smart by asking questions when you are stuck.**

Texts



Fundamentals of Information Systems Security, 2nd ed. David Kim & Michael Solomon, Jones & Bartlett, 2014.

Print Bundle (Print Text & Virtual Lab Access/eLab Manual)

- www.shopJBLearning.com: \$169.95 (978-1-284-07440-6)
- Otterbein Bookstore: \$145.00 (978-1-284-07445-1)

eBook Edition (eBook Rental & Virtual Lab Access/eLab Manual)

- www.shopJBLearning.com: \$150.00 (978-1-284-07439-0)
- Otterbein Bookstore: \$186.50 (978-1-284-07444-4)

Virtual Lab Access Code (Virtual Lab Access/eLab Manual ONLY)

- www.shopJBLearning.com: \$117.00 (978-1-284-07446-8)

Homework Regular homework assignments will be made. These assignments will include reading from the text, preparation of discussion questions, and problems to solve.

Academic Honesty Policy All members of the Otterbein University community of learners are expected to follow the rules and customs of proper academic conduct. Proper conduct includes avoiding academic misconduct as defined in the [Student Life Handbook](#). Students are encouraged to help each other learn the course material. Unless specifically prohibited, you may discuss homework problems and lab exercises with one another. Participants in these discussions usually enjoy the benefit of deeper and greater learning. However, all work submitted for evaluation that is based on discussions with others must be your own work; created with your own hands and fingers while thinking it through.

Any work submitted for evaluation that includes work done by another, copying of another's work, or the result of following another's step-by-step keystrokes and mouse clicks, is a case of academic misconduct. When academic misconduct is found in any assignment or examination you submit, you will receive a zero grade for that assignment or exam. The misconduct will also be reported to the Office of the Academic Dean. If a previous academic misconduct offense is on your record, you will receive a grade of F for this course and a referral to the judicial system.

Disability Statement

Otterbein University is committed to ensuring that students with disabilities have access to an education. In order to receive appropriate accommodations in my class, you must first be registered with the Office for Disability Services (823-1618 or KManley@otterbein.edu). If you need an accommodation based on the impact of a disability, you should contact me to arrange an appointment as soon as possible. At the appointment we can discuss the course format, anticipate your needs and explore potential accommodations. If necessary, we can work cooperatively with the Disability Services Coordinator to determine optimal accommodations in this course

Grading	<u>Assignment</u>	<u>Weight</u>	<u>Range</u>	<u>Grade</u>	<u>Range</u>	<u>Grade</u>
	Lab Exercises	40%	93 - 100%	A	73 - 76.9%	C
	Homework	10%	90 - 92.9%	A-	70 - 72.9%	C-
	Presentations	15%	87 - 89.9%	B+	65 - 69.9%	D+
	Final exam	30%	83 - 86.9%	B	60 - 64.9%	D
	Participation	5%	80 - 82.9%	B-	0 - 59.9%	F
			77 - 79.9%	C+		

The following schedule is tentative and subject to change.

Week	Textbook	Labs
1	Access Controls (5) [also read chpt 1]	1 (Recon & Probing) & 2 (Vulnerability)
2	Security Operations & Administration (6)	3 (Access Controls)
3	Auditing, Testing & Monitoring (7) [also read chpt 2]	4 (Group Policy) & 5 (Packets + Traffic)
4	Risk, Response, & Recovery (8)	6 (Business Continuity Plan)
5	Cryptography (9) [also read chpt 3]	7 (Encryption)
6	Networks & Telecommunications (10)	8 (Web/Database Attack) & 9 (Threats)
7	Malicious Code & Activity (11) [also read chpt 4]	10 (ISS Policy)
Final	Final Exam: Thursday, February 26	