

CS280

Web Security and Ethics

[Onsite]

Course Description:

This course examines the ethical responsibilities in maintaining a Web or Intranet/Internet site and the potential chances of misuse. Information access and security issues in managing a Web site are also included.

Prerequisite(s) and/or Corequisite(s):

Prerequisite: CS110 Introduction to Web Applications or equivalent

Credit hours: 4

Contact hours: 50 (30 Theory Hours, 20 Lab Hours)

Syllabus: Web Security and Ethics

Instructor: _____

Office hours: _____

Class hours: _____

Major Instructional Areas

1. Introduction to ethics
2. Networking
3. Freedom of speech
4. Intellectual property
5. Privacy: Legal and ethical aspects
6. Errors, failures, and risks: Cryptographic tools
7. Computer and network security, crime, and malicious software
8. Intrusion detection, firewalls, intrusion prevention
9. Linux and Windows security
10. Professional ethics and responsibilities
11. Work ethics, work and wealth, human factors

Course Objectives

1. Describe cybercrime and understand various common cybercrimes.
2. Illustrate various types of ethical models.
3. Analyze ethical and legal issues involved in different forms of communication over the Web, as well as the operation of networks.
4. Analyze ethical and legal aspects of publishing, distributing, and accessing information over the Web, including copyright, trademark, and other intellectual property issues.

5. Analyze the ethical and legal aspects of an individual's right to privacy in cyberspace.
6. Explain encryption and how it is used to ensure privacy and security.
7. Depict methods to prevent intrusion attacks.
8. Determine methods to ensure Web and network security.
9. Evaluate professional ethics and responsibilities for computer professionals.
10. Define the factors in a workplace that affect the actions of a computer professional.

SCANS Objectives

SCANS is an acronym for Secretary's Commission on Achieving Necessary Skills. The committee, created by the National Secretary of Labor in the early 1990s, created a list of skills and competencies that the committee feels are necessary for employees to function in a high-tech job market.

1. Acquire and evaluate information.
2. Know the need for a code of ethics for the World Wide Web.
3. Demonstrate competence in ensuring Web site security.
4. Demonstrate competence in preventing the spread of malicious code.
5. Acquire knowledge on how the Web functions.
6. Apply and adapt new knowledge and skills in both familiar and changing situations.

Course Outline

Note: All graded activities, except the Course Project, are listed below in the pattern of <Unit Number>.<Assignment Number>. For example, Labs: 2.1 refers to the 1st lab activity in Unit 2.

Unit	Activities
1– Introduction to Ethics and	<ul style="list-style-type: none"> • Content Covered: <i>Web Security and Ethics</i>

Unit	Activities
Cyber crime	Part III–Moral and Ethical Issues: <ul style="list-style-type: none"> ○ Chapter 2, “Introduction to Ethics” Part I–Computer Security: <ul style="list-style-type: none"> ○ Chapter 18, “Legal and Ethical Aspects” ● Project: Assigned ● Writing Assignments: 1.1
2– Ethics and the Web	<ul style="list-style-type: none"> ● Read from <i>Web Security and Ethics</i>: <ul style="list-style-type: none"> ○ Part III–Moral and Ethical Issues: Chapter 3, “Networking” ○ Part II–Social, Legal, and Ethical Issues for Computing and the Internet: Chapter 3, “Freedom of Speech” ● Writing Assignments: 2.1 ● Labs: 2.1
3– Ethics and Cyber Content	<ul style="list-style-type: none"> ● Read from <i>Web Security and Ethics</i>: <ul style="list-style-type: none"> ○ Part III–Moral and Ethical Issues: Chapter 4, “Intellectual Property” ○ Part II–Social, Legal, and Ethical Issues for Computing and the Internet: Chapter 4, “Intellectual Property” ● Writing Assignments: 3.1 ● Labs: 3.1
4– Ethics and Privacy	<ul style="list-style-type: none"> ● Read from <i>Web Security and Ethics</i>: <ul style="list-style-type: none"> ○ Part III–Moral and Ethical Issues: <i>Chapter 5, “Privacy”</i> ○ Part II–Social, Legal, and Ethical Issues for Computing and the Internet: Chapter 2, “Privacy” ○ Part I–Computer Security: <i>Chapter 18, “Legal</i>

Unit	Activities
	<p style="text-align: center;">and Ethical Aspects”</p> <ul style="list-style-type: none"> • Writing Assignments: 4.1 • Quizzes: 4.1 • Labs: 4.1 • Project: Part 1 due
<p>5– Security and Encryption</p>	<ul style="list-style-type: none"> • Read from <i>Web Security and Ethics</i>: <ul style="list-style-type: none"> ○ Part II–Social, Legal, and Ethical Issues for Computing and the Internet: Chapter 8, “Errors, Failures, and Risks” ○ Part III–Computer Security: <i>Chapter 2, “Cryptographic Tools”</i> • Writing Assignments: 5.1 • Project: Part 2 due • Labs: 5.1
<p>6– Malicious Code</p>	<ul style="list-style-type: none"> • Read from <i>Web Security and Ethics</i>: <ul style="list-style-type: none"> ○ Part III–Moral and Ethical Issues: <i>Chapter 6, “Computer and Network Security”</i> ○ Part II–Social, Legal, and Ethical Issues for Computing and the Internet: Chapter 5, “Crime” ○ Part I–Computer Security: <i>Chapter 7, “Malicious Software”</i> • Writing Assignments: 6.1 • Labs: 6.1
<p>7– Preventing Web Intrusions</p>	<ul style="list-style-type: none"> • Read from <i>Web Security and Ethics</i> <ul style="list-style-type: none"> ○ Part I–Computer Security: <i>Chapter 6, “Intrusion Detection”</i> ○ Part I–Computer Security: <i>Chapter 9, “Firewall and Intrusion Prevention Systems”</i>

Unit	Activities
	<ul style="list-style-type: none"> • Writing Assignments: 7.1 • Project: Part 3 due
<p>8–</p> <p>Implementing Web Site Security</p>	<ul style="list-style-type: none"> • Read from <i>Web Security and Ethics</i>: <ul style="list-style-type: none"> ◦ Part I–Computer Security: Chapter 23, “Linux Security” ◦ Part I–Computer Security: Chapter 24, “Windows Security” • Writing Assignments: 8.1 • Graded Activity 8.1: Securing a Linux server • Quizzes: 8.1 • Labs: 8.1 • Project: Part 4 due
<p>9–</p> <p>Professional Ethics and Responsibilities</p>	<ul style="list-style-type: none"> • Read from <i>Web Security and Ethics</i>: <ul style="list-style-type: none"> ◦ Part III–Moral and Ethical Issues: Chapter 8, “Professional Ethics” ◦ Part II–Social, Legal, and Ethical Issues for Computing and the Internet: Chapter 9, “Professional Ethics and Responsibilities” • Writing Assignments: 9.1 • Labs: 9.1 • Project: Part 5 due
<p>10–</p> <p>The Work Place and Human Factors</p>	<ul style="list-style-type: none"> • Read from <i>Web Security and Ethics</i>: <ul style="list-style-type: none"> ◦ Part II–Social, Legal, and Ethical Issues for Computing and the Internet: Chapter 6, “Work” ◦ Part III–Moral and Ethical Issues: Chapter 9, “Work and Wealth” ◦ Part I–Computer Security: Chapter 14, “Human Factors”

Unit	Activities
	<ul style="list-style-type: none"> • Writing Assignments: 10.1 • Project: Part 6 due
11– Review and Final Exam	<ul style="list-style-type: none"> • Course Review • Final Exam

Instructional Methods

The curriculum for this course uses a range of assessments to test your knowledge: writing assignments, quizzes, labs, and a final exam. Writing assignments will focus on improving your composition and analytical skills. The quizzes and final exam will test your understanding of the course objectives. In addition, a course project will allow you to demonstrate your understanding of server security.

Instructional Materials and References

Student Textbook Package

- Quinn, Michael J., Sara Baase, William Stallings, and Lawrie Brown. *Web Security and Ethics*. Indianapolis: Pearson Custom Publishing, 2010.

References

ITT Tech Virtual Library

Log on to the ITT Tech Virtual Library at <http://library.itt-tech.edu/> to access online books, journals, and other reference resources selected to support ITT Tech curricula.

Books

You may click “Books” or use the “Search” function on the home page to find the following books.

- Ebrary
 - Pastore, Mike, and Emmett Dulaney. *Security+ Study Guide*. Alameda, CA: Sybex, 2004.

- Tittel, Ed, James Michael Stewart, and Mike Chapple. *CISSP: Certified Information Systems Security Professional Study Guide. 2nd ed. Alameda, CA: Sybex, 2004.*

Other References

The following resources may be found **outside** of the ITT Tech Virtual Library.

Web sites

- <http://www.informIT.com> (accessed Jan. 12, 2010)

Portal page to articles, information, and training on a range of technical and business topics

- <http://www.crimetime.com> (accessed Jan. 12, 2010)

A Web site for criminal investigators with news and links to resources

- <http://www.sans.org/> (accessed Jan. 15, 2010)

Information about computer security training, network research, and resources from The SANS Institute

- <http://www.hackingalert.com/> (accessed Jan. 15, 2010)

Portal page to information on ethical hacking, tools, hacking culture, and preventing hacking

- <http://www.ethicalhacker.net/content/view/94/24>
(accessed Jan. 15, 2010)

A tutorial on Rainbow Tables and Rainbow Crack from The Ethical Hacker Network, an online magazine for security professionals

- <http://www.microsoft.com> (accessed Jan. 12, 2010)

Microsoft home page with links to product information, updates, training, and support

All links to Web references outside of the ITT Tech Virtual Library are always subject to change without prior notice.

Course Evaluation and Grading

Evaluation Criteria Table

The final grades will be based on the following categories:

CATEGORY	WEIGHT
Labs	20%
Project	20%
Writing Assignments	25%
Quizzes	15%
Final Exam	20%
Total	100%

Note: Students are responsible for abiding by the Plagiarism Policy.

Grade Conversion Table

The final grades will be calculated from the percentages earned in the course, as follows:

A	90-100%	4.0
B+	85-89%	3.5
B	80-84%	3.0
C+	75-79%	2.5
C	70-74%	2.0
D+	65-69%	1.5
D	60-64%	1.0
F	<60%	0.0

(End of Syllabus)