Saint Leo University
Graduate Studies in Business

COM 545
Web Services Security

Course Description:
Access to the World Wide Web and Internet for multiple purposes is one of the major components of most business operations. Many businesses also use the same protocols and processes to provide internal communications. Security of these assets is imperative for a successful business. This course provides the concepts and procedures of assessing and managing security for Web activities.

Prerequisite:
COM 510

Textbooks:

 Student Note: Students ordering from our online bookstore will access the materials from the links in the course. There is nothing to receive from the bookstore once the order has been placed. This class has direct digital access within the course.

Harwood, M. (2016). *Internet security: How to defend against attackers on the Web* (2nd ed.). (eBook w/ lab access) Burlington, MA: Jones & Bartlett. ISBN: 9781284176728 (Custom for Saint Leo)

Created From the National lab package:

Harwood, M. (2016). *Internet security: How to defend against attackers on the Web* (2nd ed.). (Print book w/ lab access) Burlington, MA: Jones & Bartlett. ISBN: 978-1-2841-3210-6

Learning Outcomes:

1.   Describe and explain general security elements including the basics of information security, security processes, threats to IT assets, and encryption.
2.   Describe and explain network security including its fundamentals, the threats to network security, and intrusion detection.
3.   Describe and explain system security including its fundamentals, UNIX system security, and Windows system security.
4.   Describe and explain security assurance including standards and compliance and security testing.
5.   Discuss, integrate, and explain the relevance of Integrity, including the criticality of Ethical Behavior, in using computers in an organizational environment.

Core Value:

Integrity: The commitment of Saint Leo University to excellence demands that its members live its mission and deliver on its promise. The faculty, staff, and students pledge to be honest, just, and consistent in word and deed.

Evaluation:

Tests 25%
Quizzes 15%
Lab Assignments 25%
Writing Assignments 25%
Discussion 10%

Tests: During this class, you will complete two tests, a Midterm Exam and a Final Exam, to verify that you have read and understood the chapters. The Midterm exam will be on the material covered in Modules 1 to 4. The Final Exam will be on the material covered in Modules 5 to 8.

Quizzes: There are two quizzes in the course which will consist of multiple-choice questions. They are designed to ensure that you have read and understood the material in the text for the chapters covered in the quiz.

Lab Assignments: In this course the assignments at the end of the chapters are called Hands-on Projects and Case Projects. The vast majority of the computers used in the business field use Microsoft Windows as their operating system. As such, the majority of the assignments in the course will be using or be about Windows.

Writing Assignments: In this text the assignments are scenario-based to appeal student's interest in solving real-world problems.

Discussion: The rapidity with which data becomes obsolete in the computer field, particularly in a rapidly growing field such as information security makes it imperative that you are constantly updated in the field. Discussion questions are designed to give students the opportunity to reflect on the various web security management methodologies and techniques that are discussed throughout the term.

Grading Scale:

Grade	Score (%)
A	95-100
A-	90-94
B+	86-89
B	83-85
B-	80-82
C	75-79
F	Below 75

Assessment of the Learning Outcomes:

Learning Outcome	Assessment Methods
1	Lab exercises
2	Lab exercises
3	Writing Assignment
4	Writing Assignment
5	Discussion

Course Schedule:

Module 1   **Introduction to the Web and E-business**

Objectives   When you complete this module, you should be able to:
- Identify the highlights in the evolution of data processing, from mainframes to the World Wide Web (WWW).
- Explain the characteristics of Web 1.0, 2.0, and 3.0.
- Analyze the impact of the Internet and Web applications on the business world.
- Identify the procedures for growing a business through the WWW.
- Enhance customer service delivery and understand the features of a self-service website.

Assignments

Items to be Completed:	Due No Later Than:
Post an introduction to the class	Thursday 11:59 PM EST/EDT
Read the assigned material	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Writing Assignment 1	Sunday 11:59 PM EST/EDT
Submit Lab Assignment 1	Sunday 11:59 PM EST/EDT

Module 2   **Communications and Social Networking**

Objectives   When you complete this module, you should be able to:
- Analyze the evolution of people-to-people communications.
- Demonstrate how unified communication works.
- Analyze online personal and business communications and the threats to those communications.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned material	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Lab Assignment 2	Sunday 11:59 PM EST/EDT
Complete Quiz 1	Sunday 11:59 PM EST/EDT

Module 3   **Mitigating Risk on the Web**

Objectives   When you complete this module, you should be able to:
- Describe best practices for connecting to the Internet and securing a network perimeter.
- Evaluate the function of DNS and web hosting.
- Identify common ports and their function.
- Compare and contrast web-based risks.
- Analyze common website attacks, weaknesses, and security best practices.
- Manage injection flaws and prevent malicious file execution and cross-site request forgery.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned material	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Lab Assignment 3	Sunday 11:59 PM EST/EDT

Module 4   **Mitigating Risk on the Web**

Objectives   When you complete this module, you should be able to:
- Classify the functions of the WASC threats.
- Review WASC threat types.
- Compare web attacks.
- Differentiate the role of authentication and authorization in web attacks.
- Review best practices.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned material	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Lab Assignment 4	Sunday 11:59 PM EST/EDT
Complete Midterm Exam	Sunday 11:59 PM EST/EDT

Module 5   **Securing and Mitigating Web Application Vulnerabilities**

Objectives   When you complete this module, you should be able to:
- Describe the attributes and qualities of the software development life cycle (SDLC).
- Design a layered security strategy for web applications.
- Differentiate Access Control.
- Classify causes of vulnerabilities.
- Show how to incorporate HTML, Javascript, CGI form, and SQL secure coding stands and techniques.
- Describe the attributes and qualities of secure coding practices.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned material	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Lab Assignment 5	Sunday 11:59 PM EST/EDT
Submit Writing Assignment 2	Sunday 11:59 PM EST/EDT

Module 6   **Maintaining Compliance**

Objectives   When you complete this module, you should be able to:
- Differentiate types of credit card transaction processing.
- Define PCI DSS.
- Show why PCI DSS compliance is important.
- Design and build a website with PCI DSS compliance.
- Identify what a PCI DSS Security Assessment entails.
- Classify best practices.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned material	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Lab Assignment 6	Sunday 11:59 PM EST/EDT
Complete Quiz 2	Sunday 11:59 PM EST/EDT

Module 7   **Testing, Quality Assurance, and Security Assessment**

Objectives   When you complete this module, you should be able to:
- Differentiate the functions of SDLC.
- Identify types of documentation used to help secure websites and applications.
- Identify security holes.
- Use website monitoring tools.
- Determine the difference between software testing versus website vulnerability and security assessments.
- Perform a vulnerability and security assessment on various website components.
- Prepare a vulnerability and security assessment report.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned material	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Lab Assignment 7	Sunday 11:59 PM EST/EDT

Module 8   **Securing Endpoint Device and Personal and Business Communications**

Objectives   When you complete this module, you should be able to:
- Define "endpoint devices."
- Classify functions of 3G and 4G networks.
- Identify risks, threats, and vulnerabilities associated with endpoint devices.
- Differentiate and describe advantages between store-and-forward communication and real-time communication.
- Provide risk mitigation strategies across various devices.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned material	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Lab Assignment 8	Sunday 11:59 PM EST/EDT
Complete Final Exam	Sunday 11:59 PM EST/EDT