Syllabus

Sul Ross State University (SRSU)
Computer Science and Mathematics Department
2372 Fundamental Information Assurance and Security Design

2372 Fundamental Information Assurance and Guidelines
General Course Information

Instructor Thea Glenn
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Office Hours: Wednesday 10:00 A.M.-12:00 P.M & 2:00 - 4:00 P.M.

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Course Description – 3 credit hours

This course provides students with the fundamentals of information assurance and common security architectures with a discussion of threats and strategies. It addresses compliance laws such as HIPPA, FERPA, FISMA, Gramm-Leach-Billey, and Sarbanes-Oxley as well as State, U.S. and International standards. It covers the first principles of security, security failures, identification of good human interfaces and their balance against security mechanisms. It also addresses risks, security models, access controls, security administration, monitoring, risk response, cryptography, networks and telecommunications, and malicious code.

The course provides an overview of security challenges and strategies of countermeasure in the information systems environment. Topics include definition of terms, concepts, elements, and goals incorporating industry standards and practices with a focus on availability, vulnerability, integrity, and confidentially aspects of information systems. (3 credit hours)

Prerequisite

None.

Textbook PROVIDED BY INSTRICTOR

"Fundamentals of Information Systems Security", Second Edition, David Kim and Michael G. Solomon, Jones and Bartlett Learning:

Course Structure

This course will be delivered entirely online using the Sul Ross Blackboard course management system. The Sul Ross online courses have similarities to traditional face-to-face classes. For example, each course follows a traditional university calendar with set due dates for assignments and exams. I give a buffer at the end of the course to get caught up on your assignments.

Learning Objectives

1. Explain the concepts of information systems security as applied to an IT infrastructure.
2. Describe how malicious attacks, threats, and vulnerabilities impact an IT infrastructure.
3. Describe how information security activities directly support several common business drivers.
4. Explain the role of access controls in implementing security policy.
5. Explain the role of operations and administration in effective implementation of security policy.
6. Explain the importance of security audits, testing, and monitoring to an effective security policy.
7. Describe the principles of risk management, the common response techniques, and the issues related to recovery of IT systems.
8. Explain how businesses apply cryptography in maintaining information security.
9. Analyze the importance of network principles and architecture to security operations.
10. Explain the methods attackers use to compromise systems, networks, and the defenses used by organizations.
11. Apply international and domestic information security standards to real-world applications in both the public and private sectors.
12. Apply U.S. compliance laws to real-world applications in both the public and private sectors.

Computer Science Program Learning Objectives

1. Understand the fundamental concepts of computer science including algorithms and data structures.
2. Understand modern computer systems, databases, and networking.
3. Display an understanding and ability to implement current programming methodologies.
4. Become proficient with system design based on object-oriented programming.
5. Work as a team in workgroup environments.

Course Summary and Grading

Course Summary

The table below provides a summary of the weekly course activities. Note that additional details and instructions will be provided to the student via the Blackboard interface. The maximum number of points accrued by successful completion of each assignment is shown in the last column.

Introduction		Instructor, Classmate Introductions	Instructions – Blackboard Navigation Video - Blackboard Training and Help urriculum Instructions – Virtual Lab Setup Link – Test System Settings for Lab Access Instructions – Virtual Lab Help Desk Access Discussion – Classmate Introductions	10
1		Course Overview	Link – Information Assurance vs Information Security E-Book – Fundamentals of Information Systems Security Read – Chapter 1. Information Systems Security Lab /Quiz– Reconnaissance and Probing Using Common Tools	20
2	Threats	InfoSec Perspective	Video – Information Security (InfoSec) Perspective Video – All Your Devices Can Be Hacked E-Book – Fundamentals of Information Systems Security Read – Chapter 3. Malicious Attacks, Threats, Vulnerabilities Lab/Quiz – Performing a Vulnerability Assessment	20
3		Info Assurance Perspective	Video – Information Assurance (IA) Perspective E-Book – Fundamentals of Information Systems Security Read - Chapter 4. The Drivers of the InfoSec Business Discussion – Operation Get Rich or Die Tryin' Case Study Quiz – Chapter 4	65 20
4	Domains	Access Controls Domain	Introduction to Domains of an IT Infrastructure E-Book – Fundamentals of Information Systems Security Read - Chapter 5. Access Controls Lab/Quiz – Windows Active Directory & User Access Controls	20
5		Security Operations & Administration	E-Book – Fundamentals of Information Systems Security Read - Chapter 6, Security Operations and Administration Lab/Quiz – Using Group Policy Objects and Microsoft Baseline Security Analyzer for Change Control	20
6		Auditing, Testing, &	E-Book – Fundamentals of Information Systems Security Read - Chapter 7. Auditing, Testing, and Monitoring	20
7		Monitoring Risk Response, & Recovery	Lab/Quiz – Performing Packet Capture and Traffic Analysis E-Book – Fundamentals of Information Systems Security Read - Chapter 8. Risk, Response, and Recovery Lab/Quiz – Implementing a Business Continuity Plan	20
			Quiz – Chapter 8	20
8		Cryptography	E-Book – Fundamentals of Information Systems Security Read - Chapter 9. Cryptography Lab/Quiz - Using Encryption to Enhance Confidentiality and Integrity	20
9		Networks and Telecom	E-Book – Fundamentals of Information Systems Security Read - Chapter 10. Networks and Communications Discussion – Ipv6 versus IPv4 Security Quiz – Weeks 9 through 10	65 20
10		Malicious Code & Activity	E-Book – Fundamentals of Information Systems Security Read - Chapter 11. Malicious Code and Activity Lab/Quiz – Performing a Web Site and Database Attack by Exploiting Identified Vulnerabilities	20
11	Standards and Laws	State, US, & International Standards	Introduction to Standards and Laws E-Book – Fundamentals of Information Systems Security Read - Chapter 12. Information Security Standards Lab/ Quiz – Eliminating Threats with a Layered Security Approach	20
12		US Compliance Laws	E-Book – Fundamentals of Information Systems Security Read - Chapter 15. U. S. Compliance Laws Lab/Quiz – Implimenting an Info Sys Security Policy	20
13			Quiz – Chapter 15	20
14				
			Total	400

Course Grading

Final grades assigned for this course will be based on the total points earned and are assigned as follows:

400 to 360 Points	A – Excellent
359 to 320 Points	B – Good
319 to 280 Points	C – Average
279 to 240 Points	D – Poor
239 Points & below	F – Failing

Note that the points earned as the course proceeds will be visible to the student in Blackboard. Points will typically be posted within a week of each assignment due date. There will be a visual indication in Blackboard when new points are posted.

Student/Academic Support Services

Information about U.S. Department of Education-funded programs designed to increase academic performance, retention rates and graduation rates is available at http://www.sulross.edu/section/311/student-support-services.

The Sul Ross Academic Center for Excellence, http://www.sulross.edu/academic-center-excellence, provides information about academic programs, services, resources, links and points of contact.

Student Responsibilities

Complete Assignments on Time and in Designated Format

Assignments must be submitted by the given deadline. Extensions will not be given except under extreme circumstances. The student is responsible for notifying the instructor if further clarification is needed about any of the assignments.

All assignments must be submitted in the Blackboard assignment drop box in a universally readable format. Emailed assignments will not be accepted unless there was a technical problem with Blackboard on the due date.

Commit to Academic Honesty, Integrity, and Courtesy

Each student is expected to be fully acquainted and comply with all published policies, rules, and regulations of the University, copies of which shall be available to each student in the Student Life office and on-line at http://www.sulross.edu/sites/default/files//sites/default/files/users/docs/stulife/iv_university_policies_procedures.pdf. Students are expected to comply with all federal and state laws. Students are also expected to ask questions, collaborate, and express opinions in ways that are considerate of others.

Contact Instructor if Need Special Assistance

Contact your instructor promptly if you are having problems with your course work or are in need of special assistance.

Request Needed Americans with Disabilities Act Accommodations (ADA)

It is the Sul Ross State University policy to provide reasonable accommodations to students with documented disabilities. If you would like to request such accommodation because of a physical, mental or learning disability, please contact the ADA Coordinator in the Counseling and Accessibility Services Office, Grace Petty, Ferguson Hall 112, or phone 432-837-820.