

CSST 4374 – Network Defense

Sul Ross State University

Instructor: Thea Glenn

Office Location: MAB 110

Office Phone: 931-237-3324 No calls after 11pm

Text: 931-237-3324

Class: *Online*

(No text after 10 pm or before 10 am)

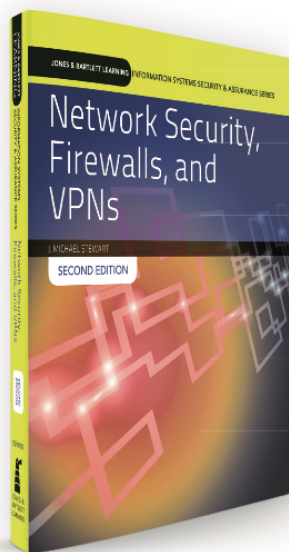
Email: tglenn2@sulross.edu **Office Hours:** T&W 10 am to 1 pm

Required Materials:

Textbook: Purchase the class book from <http://go.jblearning.com/stewart2e>

Click on the options tab when the webpage opens. This will take you to the proper book for this class. Thanks!

This book is specially made for this class.



Network Security, Firewalls, and VPNs, Second Edition

VIRTUAL SECURITY
CLOUDLABS 3.0

Book and VSCL 3.0 Lab Environment via Navigate 2

J. Michael Stewart

Ordering Options

Order direct at go.jblearning.com/stewart2e

Print Bundle

ISBN: 978-1-284-15968-4
Print Textbook and Virtual
Security Cloud Lab Access
Suggested retail price: \$179.95

eBook Bundle

ISBN: 978-1-284-18859-2
Navigate 2 eBook and Virtual
Security Cloud Lab Access
Suggested retail price: \$149.95

Computer Science SLOs

1. Understand modern computer systems, databases, and networking.
2. Work as a team in workgroup environments.

Learning Objectives:

Course Objectives

This course provides students with knowledge of the methods of analyzing and mitigating threats coming from inside or outside the network. It addresses network protocols, security devices, security services, configuration, and packet capture and analysis.

Specific topic coverage includes the following (time permitting):

- Network Security Fundamentals
- TCP/IP
- Network Traffic Signatures
- Routing Fundamentals
- Cryptography
- Wireless Networking Fundamentals
- Understanding Wireless Networking Security
- Intrusion Detection and Prevention System Concepts
- Firewall Concepts
- Firewall Design and Management
- Virtual Private Network (VPN) Concepts
- Internet and Web Security
- Security Policy Design and Implementation
- Ongoing Security Management

Attendance (in class):

Attendance Policy: Students are expected to attend every class. If class must be missed, the student is expected to get the notes from a classmate, and to check with me or on Blackboard for announcements and updated assignments.

Students are expected to arrive to class on time. If a student is perpetually late, they will be asked to not attend class unless they can arrive on time. If tardiness becomes a problem for the class as a whole, people who arrive late will not be permitted to enter the class. If this stricter policy becomes necessary, there will be an announcement made in class.

It is policy of the university to drop a student with a grade of "F" if 9 hours or more of class are missed. For this course that would be 9 or more class sessions missed. For online courses student must log into blackboard within 3 weeks or will be withdrawn from the course with the grade of an "F"

Distance Education Statement:

Students enrolled in distance education courses have equal access to the university's academic support services, such as Smarthinking, library resources, such as online databases, and instructional technology support. For more information about accessing these resources, visit the SRSU website. Students should correspond using Sul Ross email accounts and submit online assignments through Blackboard, which requires secure login information to verify students' identities and to protect students' information. ***Students need to purchase the book for this class otherwise you will fail.*** The procedures for filing a student complaint are included in the student handbook. Students enrolled in distance education courses at Sul Ross are expected to adhere to all policies pertaining to academic honesty and appropriate student conduct, as described in the student handbook. Students in web-based courses must maintain appropriate equipment and software, according to the needs and requirements of the course, as outlined on the SRSU website.

Need for Assistance

Qualified students with disabilities needing academic or other accommodations to ensure full participation in the programs, services and activities at Sul Ross State University should contact the Disabilities Services Coordinator, in Counseling and Prevention Services, Ferguson Hall 112, Box C-117, Alpine, Texas 79832. Please notify me before the third day of classes.

Course Polices

Quizzes and assignments must be submitted on time. I have set up rules in BlackBoard so that assignments cannot be submitted after the due date.

Academic Dishonesty: Honesty in completing assignments is essential to the mission of the university and to the development of the personal integrity of the student. Cheating, plagiarism, or other kinds of academic dishonesty will not be tolerated and will result in appropriate sanctions that may include failing an assignment, failing the class, or being suspended or expelled. Suspected cases in this course may be reported to Student Life.

Posting of Grades

As soon as assignments, exams, and quizzes are graded, the grades will be posted in Blackboard.

Grading

Letter grades will be determined using a standard percentage point evaluation as outlined below. Please note that this is a tentative schedule and can change. Any changes that happen will be updated in Blackboard and due dates for assignments are be posted in Blackboard.

Calculating points based on the following weights will determine your final grade:

A	90 - 100 points
B	80 - 89 points
C	70 – 79 points
D	60 – 69 points
F	below 60 points

Assignment Break Down:

Discussion questions = 10%

Labs = 35%

Project 30%

Exam =25%

Grading Category	Activity Title
<i>Lesson 1: Fundamentals of Network Security</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 1, "Fundamentals of Network Security"
Discussion	Familiar Domains
<i>Lesson 2: Firewall Fundamentals</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 2, "Firewall Fundamentals"
Lab	Analyzing IP Protocols with Wireshark
<i>Lesson 3: VPN Fundamentals</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 3, "VPN Fundamentals"
Lab	Using Wireshark and NetWitness Investigator to Analyze Wireless Traffic
<i>Lesson 4: Network Security Threats and Issues</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 4, "Network Security Threats and Issues" NIST SP 800-30: Guide for Conducting Risk Assessments (http://csrc.nist.gov/publications/PubsSPs.html; use the latest version)
Lab	Configuring a pfSense Firewall on the Client
<i>Lesson 5: Network Security Implementation</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 5, "Network Security Implementation"
Project	Project Part 1
<i>Lesson 6: Network Security Management</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 6, "Network Security Management" NIST SP 800-61: Computer Security Incident Handling Guide (http://csrc.nist.gov/publications/PubsSPs.html; use the latest version)
Lab	Configuring a pfSense Firewall for the Server
<i>Lesson 7: Firewall Basics</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 7, "Firewall Basics"

Grading Category	Activity Title
Lab	Penetration Testing a pfSense Firewall
<i>Lesson 8: Firewall Deployment Considerations</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 8, "Firewall Deployment Considerations"
Discussion	Firewall Security Strategies
<i>Lesson 9: Firewall Management and Security Concerns</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 9, "Firewall Management and Security"
Lab	Using Social Engineering Techniques to Plan an Attack
Project	Project Part 2
<i>Lesson 10: Using Common Firewalls</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 10, "Using Common Firewalls"
<i>Lesson 11: VPN Management</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 11, "VPN Management"
Lab	Configuring a Virtual Private Network Server
<i>Lesson 12: VPN Technologies</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 12, "VPN Technologies"
Lab	Configuring a VPN Client for Secure File Transfers
<i>Lesson 13: Firewall Implementation</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 13, "Firewall Implementation"
Discussion	What to Protect, Why, and How
<i>Lesson 14: Real-World VPNs</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 14, "Real-World VPNs"
Lab	Attacking a Virtual Private Network
<i>Lesson 15: Perspectives, Resources, and the Future</i>	
Required Readings	<ul style="list-style-type: none"> Chapter 15, "Perspectives, Resources, and the Future"
Lab	Investigating and Responding to Security Incidents
<i>Lesson 16: Course Review and Final Examination</i>	

Grading Category	Activity Title
Project	Final Project: Network Security Plan
Exam	Final Examination