NET 240
Network Security

COURSE DESCRIPTION:

Course Description: Students learn, in depth, the various network security principles, features, protocols, and implementations used in today’s networks, including securing perimeter Routers using Access Control Lists, Configuring Firewalls, TACACS, Intrusion Detection Systems (IDS), and Denial of Service (DoS) migration techniques. Cisco security standards are used as the basis for hands-on exercises. Hands-on exercises reinforce security certification exam objectives.

Text (s): Reference Division Booklist

Prerequisites: NET 130

Co-requisites:

Credits: 3 Lecture Hours: 2 Studio/Lab Hours: 2

Food and Drink are strictly prohibited in classrooms as per Health and Safety Laws. Students may not bring in chemicals of any kind without the appropriate MSD sheets.

Course Coordinator: Jeff Weichert

Latest Review: SPRING 2019
I. **COURSE OBJECTIVES**

At the completion of this course, with appropriate study, you will be able to do the following:

- Analyze business security requirements, including strategies, structures, and processes.
- Evaluate a company’s existing and planned technical environment.
- Identify security risks and requirements and define security baselines.
- Evaluate and implement corporate security policy.
- Evaluate and implement network security, including routers, firewalls and servers.

II. **PREREQUISITES**

Students should have taken the courses, and/or passed the associated exams, in the following core areas:

- Installing, configuring, and administering the desktop operating system.
- Installing, configuring, and administering the server operating system.
- Implementing and administering a basic network infrastructure.
- Implementing and administering routed and switched network environments.

III. **COURSE OUTLINE**

**Week 1 – Introduction:**

- Brief class introduction
- What is Network Security?
- Why we need Network security?
- Why do we have security issues?
- Types of Security threats

**Week 2 – Security Policy:**

- Establishing Network security policy
- The importance of protecting the network
- The security posture assessment process

**Week 3 – Evaluating Security Policy:**

- Introduction to Cisco Security Technologies
- Access control Lists
- Securing your network using Cisco Routers – the basics
- Securing the router
- Hands-on practice lab configuring Cisco router
Week 4 – Implementing Security Policy: Routers

- Securing your network using Cisco routers – the basics
- Securing the router
- Hands-on practice lab configuring Cisco router

Week 5 – Hands-on practice lab configuring Cisco router

Week 6 – Implementing Security Policy: Routers

- Hands-on practice lab configuring Cisco router

Week 7 – Implementing Security Policy: Routers

- Securing your network using Cisco routers
- Controlling access to internal networks
- Securing the router
- Hands-on practice lab configuring Cisco router

Week 8 – Implementing Security Policy: Routers

- Hands on practice lab configuring Cisco routers
Week 9 – Implementing Security Policy: Firewalls

Securing your network using a Firewall
Controlling access to internal networks
Hands-on practice lab configuring Cisco PIX Firewall

Week 10 – Implementing Security Policy: Firewall

Hands-on practice lab configuring Cisco PIX Firewall

Week 11 – Implementing Security Policy: Servers

Introduction to Securing Servers
Introduction to VPN, IPSec, and Encryption methods
Overview of TACACS
Hands-On practice lab

Week 12 – Implementing Security Policy: Servers

Introduction to Intrusion detection Systems (IDS)
Hands-on practice lab

Week 13 – Implementing Network Security: Routers and Servers

Group Project Implementing Network Security to secure the network

Week 14 – Implementing Network Security: Routers, FW and Servers

Group Project Implementing Network Security to secure the network infrastructure using Cisco router, Cisco PIX Firewall and WIN 2000 Servers.

Week 15 – Final Exam

IV EVALUATION

Final grades are determined through a weighted average of midterm and final examinations, quizzes, laboratory assignments, homework assignments, class participation, and attendance. Your final grade in the course will be based on the following:

- Class attendance, participation, and lab work: 10%
- Homework assignments: 10%
- Quizzes/Tests: 20%
- Project: 10%
- Midterm examination: 25%
- Final examination: 25%

Total: 100%
Grades will be assigned in accordance with the following:

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<thead>
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<th>Letter grade</th>
<th>Nominal %</th>
<th>QPA quality points</th>
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<td>0-59</td>
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**Attendance Policy:**
It is expected that students attend and be on time for all class meetings; attendance is taken at the beginning of every class. 3 lates count as an absence. To accommodate students’ reasonable, personal situations that might prevent them from attending classes, each student is entitled to excused absences amounting to the equivalent of one week’s class time in a semester. At the instructor's discretion, students’ reasonable, personal situations may permit limited excused absences if proper documentation is provided. Students with repeated unexcused absences may be subjected to a drop in letter grade or result in withdrawal from the course. Students are responsible for acquiring content that is covered, announcements made, and materials that may have been distributed.

**Assignment Policy:**
All assignments are expected to be handed in on the due date at the beginning of class. 10% will be deducted each week for assignments turned in late. All late assignments must be turned in two weeks prior before the final exam.

**Academic Integrity Statement**
Academic integrity is important to student success. Students who submit the work of another student will be penalized. According to the student handbook, “A student who, a) knowingly represents work of others as his/her own; b) uses or obtains unauthorized assistance in the execution of any academic work; or c) gives fraudulent assistance to another student is guilty of cheating. Violators will be penalized.”

**Classroom Conduct Statement**
The college welcomes all students into an environment that creates a sense of community and pride and respect; we are all here to work cooperatively and to learn together.

Students must follow ordinary rules of courtesy during class sessions. Engaging in private conversations, texting, answering a cell phone, sleeping, or other disruptive behavior during class time will not be tolerated.

**First Semester Students** A coach has been assigned to assist you with navigating your first semester in college. They help with understanding how Mercer works, finding appropriate help with coursework, and establishing academic goals. [www.mccc.edu/coaching](http://www.mccc.edu/coaching) to find
your coach or Contact: Arlene Stinson, LB217, 570-3451,  SOAR@mccc.edu

**Academic Advising after your first semester** Faculty advisors provide help with completing your major after your first semester. Meet your faculty advisors! Contact the division of your major to find out who is your faculty advisor.

Liberal Arts Division Debbie Stotland LA162, 570-3378,  Stotland@mccc.edu

Bus STEM Division Doris Geck BS134, 570-3482,  Geckd@mccc.edu

Health Sciences Barbara Pieslak MS126, 570-3383,  pieslakb@mccc.edu

Undecided major Michael Glass SC201, 570-3530,  glassm@mccc.edu

**Use your “MyMercer” Portal!** Your “MyMercer” portal contains your MercerMail, financial information, class schedule, grades, and other information. Check your “MyMercer” portal every day! Visit [www.mccc.edu/mymercer](http://www.mccc.edu/mymercer) to access your portal.

**Tutoring support** Academic support services are free and available for all students. Drop in or contact the following to make arrangements:

Arlene Stinson (WWC), LB 217, 570.3422,  stinsona@mccc.edu

Joann Mia (TC), KC311, 570-3128,  miaj@mccc.edu

**Reasonable Accommodations for Students with Documented Disabilities** Mercer County Community College is committed to ensuring the full participation of all students in all activities, programs and services. If you have a documented differing ability or think that you may have a differing ability that is protected under the ADA and Section 504 of the Rehabilitation Act, please contact Arlene Stinson in LB 216 stinsona@mccc.edu for information regarding support services. If you do not have a documented differing ability, remember that other resources are available to all students on campus including academic support through our Academic Learning Center located in LB 214.

**Career and Transfer Center** Planning to go to work or to transfer to a 4-year college after completing your Mercer degree? Contact the Career and Transfer Center for support.

Laurene Jones (WWC transfer services), SC201, 570-3307,  jonesl@mccc.edu

Michael Glass (WWC career services), SC201 570-3530,  glassm@mccc.edu

Kimberley Bowser (TC transfer and career), KC216, 570-3110,  bowserk@mccc.edu

**Counseling Services** Are you experiencing personal challenges, feeling overwhelmed? Are you having stress and anxiety? Counseling services are available free of charge. Contact: Dorothy Gasparro (Counseling srvs), SC239, 570-3354,  gasparrd@mccc.edu

**Veteran’s Services** If you are military, veteran, or family member, we offer free support for you. Contact: John Becker, SC220, 570-3240,  vets@mccc.edu

**Financial Aid** It is recommended that students complete an application for financial aid to determine eligibility for financial assistance. The application is **FREE** and available at [www.fafsa.ed.gov](http://www.fafsa.ed.gov)