

Computer Systems Security

Course Outcome Summary

Course Information

Organization	Madison Area Technical College
Developers	Nina Milbauer
Development Date	11/24/2004
Revised Date	6/16/2005
Course Number	10-150-162
Instructional Level	Associate Degree
Potential Hours of Instruction	68
Total Credits	3

Description

Introduces the basics of network security. The student is introduced to computer network vulnerabilities and threats and how to safeguard computer networks from those vulnerabilities and threats. This course exposes the student to network security planning, network security technology, network security organization and the legal and ethical issues associated with network security. Students learn the skills necessary for Security + certification.

Target Population

Computer Information Systems students seeking an Associate Degree in Network Security Specialist or Network Specialist or Information Security Certificate

Exit Learning Outcomes

Core Abilities

- A. Communication
- B. Ethics

Competencies

A. Identify information security fundamentals

Linked Core Abilities

Communication
Ethics

You will demonstrate your competence:

- A.1. by participating in the class
- A.2. by completing lab manual assignment
- A.3. on a written evaluation
- A.4. using a business scenario

Your performance will be successful when:

- A.1. lab manual assignment is completed correctly
- A.2. you enter into class discussions about information security topics
- A.3. you offer questions or comments during class about information security topics
- A.4. you attend class regularly

- A.5. you arrive for class on time
- A.6. you listen attentively during class

B. Explore attackers and their attacks

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

- B.1. by participating in the class
- B.2. by completing lab manual assignment
- B.3. on a written evaluation
- B.4. using a business scenario

Your performance will be successful when:

- B.1. lab manual assignment is completed correctly
- B.2. you enter into class discussions about basic attacks of pc's and networks
- B.3. you offer questions or comments during class about basic attacks of pc's and networks
- B.4. you enter into class discussions about determining when an attack has taken place
- B.5. you offer questions or comments during class about determining when an attack has taken place
- B.6. you enter into class discussions about malicious code
- B.7. you offer questions or comments during class about malicious code
- B.8. you attend class regularly
- B.9. you arrive for class on time
- B.10. you listen attentively during class

C. Summarize security basics

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

- C.1. by participating in the class
- C.2. by completing lab manual assignment
- C.3. on a written evaluation
- C.4. using a business scenario

Your performance will be successful when:

- C.1. lab manual assignment is completed correctly
- C.2. you enter into class discussions about locking down a computer system utilizing security techniques
- C.3. you offer questions or comments during class about locking down a computer system utilizing security techniques
- C.4. you enter into class discussions about hardening your authentication process and passwords
- C.5. you offer questions or comments during class about hardening your authentication process and passwords
- C.6. you attend class regularly
- C.7. you arrive for class on time

C.8. you listen attentively during class

D. Summarize security baselines

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

D.1. by participating in the class

D.2. by completing lab manual assignment

D.3. on a written evaluation

D.4. using a business scenario

Your performance will be successful when:

D.1. lab manual assignment is completed correctly

D.2. you enter into class discussions about analyzing your computer and determine services that are unnecessary and disable them

D.3. you offer questions or comments during class about analyzing your computer and determine services that are unnecessary and disable them

D.4. you enter into class discussions about hardening applications, operating systems, and network hardware

D.5. you offer questions or comments during class about hardening applications, operating systems, and network hardware

D.6. you attend class regularly

D.7. you arrive for class on time

D.8. you listen attentively during class

E. Design a secure network infrastructure

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

E.1. by participating in the class

E.2. by completing lab manual assignment

E.3. on a written evaluation

E.4. using a business scenario

Your performance will be successful when:

E.1. lab manual assignment is completed correctly

E.2. you enter into class discussions about developing a plan to secure removable media devices

E.3. you offer questions or comments during class about developing a plan to secure removable media devices

E.4. you enter into class discussions about designing a cabling plan that is secure

E.5. you offer questions or comments during class about designing a cabling plan that is secure

E.6. you attend class regularly

E.7. you arrive for class on time

E.8. you listen attentively during class

F. Design web security

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

- F.1. by participating in the class
- F.2. by completing lab manual assignment
- F.3. on a written evaluation
- F.4. using a business scenario

Your performance will be successful when:

- F.1. lab manual assignment is completed correctly
- F.2. you enter into class discussions about designing a plan to protect e-mail transmissions from viruses and worms
- F.3. you offer questions or comments during class about designing a plan to protect e-mail transmissions from viruses and worms
- F.4. you enter into class discussions about World Wide Web security issues
- F.5. you offer questions or comments during class about World Wide Web security issues
- F.6. you attend class regularly
- F.7. you arrive for class on time
- F.8. you listen attentively during class

G. Protect advanced communications

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

- G.1. by participating in the class
- G.2. by completing lab manual assignment
- G.3. on a written evaluation
- G.4. using a business scenario

Your performance will be successful when:

- G.1. lab manual assignment is completed correctly
- G.2. you enter into class discussions about analyzing vulnerabilities for File Transfer Protocol and protect against them
- G.3. you offer questions or comments during class about analyzing vulnerabilities for File Transfer Protocol and protect against them
- G.4. you enter into class discussions about analyzing vulnerabilities for remote access and secure them
- G.5. you offer questions or comments during class about analyzing vulnerabilities for remote access and secure them
- G.6. you explain vulnerabilities for wireless local area networks
- G.7. you enter into class discussions
- G.8. you offer questions or comments during class
- G.9. you attend class regularly
- G.10. you arrive for class on time
- G.11. you listen attentively during class

H. Explain cryptography strengths and vulnerabilities

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

- H.1. by participating in the class
- H.2. by completing lab manual assignment
- H.3. on a written evaluation
- H.4. using a business scenario

Your performance will be successful when:

- H.1. lab manual assignment is completed correctly
- H.2. you enter into class discussions about algorithms used to encrypt data
- H.3. you offer questions or comments during class about algorithms used to encrypt data
- H.4. you hide text in a picture using cryptography
- H.5. you enter into class discussions about public key infrastructure
- H.6. you offer questions or comments during class about public key infrastructure
- H.7. you enter into class discussions about the digital certificate in use on your computer
- H.8. you offer questions or comments during class about the digital certificate in use on your computer
- H.9. you attend class regularly
- H.10. you arrive for class on time
- H.11. you listen attentively during class

I. Explain operational security

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

- I.1. by participating in the class
- I.2. by completing lab manual assignment
- I.3. in plan for disaster recovery and business continuity
- I.4. on a written evaluation
- I.5. using a business scenario

Your performance will be successful when:

- I.1. lab manual assignment is completed correctly
- I.2. you enter into class discussions about developing a training plan about social engineering for a business
- I.3. you offer questions or comments during class about developing a training plan about social engineering for a business
- I.4. plan includes site to restore data at
- I.5. plan includes different scenarios for disasters
- I.6. plan includes different levels of disasters
- I.7. plan includes recovery for each server
- I.8. plan includes recovery for network equipment
- I.9. you attend class regularly
- I.10. you arrive for class on time

I.11. you listen attentively during class

J. Design security policies and procedures

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

J.1. by participating in the class

J.2. by completing lab manual assignment

J.3. on a written evaluation

J.4. using a business scenario

Your performance will be successful when:

J.1. lab manual assignment is completed correctly

J.2. you enter into class discussions about developing a security policy for a business

J.3. you offer questions or comments during class about developing a security policy for a business

J.4. you enter into class discussions about identifying security risks for a business scenario

J.5. you offer questions or comments during class about identifying security risks for a business scenario

J.6. you attend class regularly

J.7. you arrive for class on time

J.8. you listen attentively during class

K. Summarize security management techniques

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

K.1. by participating in the class

K.2. by completing lab manual assignment

K.3. on a written evaluation

K.4. using a business scenario

Your performance will be successful when:

K.1. lab manual assignment is completed correctly

K.2. you enter into class discussions about planning to implement new security technology

K.3. you offer questions or comments during class about planning to implement new security technology

K.4. you attend class regularly

K.5. you arrive for class on time

K.6. you listen attentively during class

L. Explore advanced security concepts

Linked Core Abilities

Communication

Ethics

You will demonstrate your competence:

- L.1. by participating in the class
- L.2. by completing lab manual assignment
- L.3. on a written evaluation
- L.4. using a business scenario

Your performance will be successful when:

- L.1. lab manual assignment is completed correctly
- L.2. you enter into class discussions about researching and describing new security solutions
- L.3. you offer questions or comments during class about researching and describing new security solutions
- L.4. you attend class regularly
- L.5. you arrive for class on time
- L.6. you listen attentively during class