COURSE IDENTIFICATION

Course Code/Number: ETEC 275

Course Title: Computer and Network Security


Credit Hour(s): Three (3)

Effective Date: FA 2009/Fall 2013

Assessment Goal Per Outcome: 70%

COURSE DESCRIPTION

This course will provide an introduction to the many aspects of computer and data network security, and information assurance. The course will examine the rationale and necessity for securing computer systems and data networks, as well as methodologies for implementing security, security policies, best current practices, testing security, and incident response. Course concepts are reinforced by demonstrations and research assignments.

MINIMUM REQUIREMENTS/PREREQUISITES AND/OR COREQUISITES

CSIS 130 Introduction to Computer Information Systems or
CSIS 100 Microcomputer Business Applications

TEXTS

The official list of textbooks and materials for this course is found on Inside NC.

http://www.neosho.edu/ProspectiveStudents/Registration/CourseSyllabi.aspx
GENERAL EDUCATION OUTCOMES

1. Practice Responsible Citizenship through:
   • identifying rights and responsibilities of citizenship,
   • identifying how human values and perceptions affect and are affected by social diversity,
   • identifying and interpreting artistic expression.

2. Live a healthy lifestyle (physical, intellectual, social) through:
   • listing factors associated with a healthy lifestyle and lifetime fitness,
   • identifying the importance of lifetime learning,
   • demonstrating self-discipline, respect for others, and the ability to work collaboratively as a team.

3. Communicate effectively through:
   • developing effective written communication skills,
   • developing effective oral communication and listening skills.

4. Think analytically through:
   • utilizing quantitative information in problem solving,
   • utilizing the principles of systematic inquiry,
   • utilizing various information resources including technology for research and data collection.

COURSE OUTCOMES/COMPETENCIES (as Required)

Upon completion of this course, students will be able to:

Outcome 1:
Identify the major components of computer and network security, and information assurance.

Competencies:
  o Learn importance of Installing Firewalls
  o Learn importance of Installing Proxy servers
  o Assess Vulnerability

Outcome 2:
Explain the importance of security policies and user awareness to the "secure" operation of a network and the positive impact on an organization.

Competencies:
  o Detect Intrusions
  o Take Appropriate Countermeasures

Outcome 3:
Describe the security vulnerabilities of common operating systems and data protocols, as well as countermeasures and other ways to mitigate the vulnerabilities.

Competencies:
  o Define Viruses
  o Define Spyware
  o Define Trojan horses

Outcome 4:
Articulate a security strategy for a given networking environment.
Competencies:
- Assess Vulnerability
- Installed Firewalls
- Installed Proxy servers

Outcome 5:
Identify ways in which to keep current on security events and notices.

Competencies:
- Monitor listservs
- Read white papers
- Webinars

Outcome 6:
Describe the ethical and legal considerations associated with "attacking" computer systems and networks.

Competencies:
- Identify types of hackers
- Define ethical hacking

Outcome 7:
Demonstrate the use of active directory in network security.

Competencies:
- Group policy management
- Users management
- Server management

MINIMUM COURSE CONTENT

The following topics must be included in this course. Additional topics may also be included.

The main objective of this course is to provide the student with an understanding of the importance of security when implementing computers, servers, and networks. The course will cover a large set of topics, including:

I. Principles of computer security - Passwords, biometrics, identification
II. Basic cryptography and certificates
III. Authentication
IV. Secure network protocols (Kerberos, SSL)
V. Program security
   A. Bug exploits
B. Malicious code: viruses, worms, Trojan horses, and more

VI. Attacks and defenses on computer systems
   A. Firewalls
   B. Intrusion detection
   C. Proxy servers
   D. Vulnerability assessment
   E. Countermeasures

VII. Operating system security (Windows XP/Vista)

VIII. TCP/IP security

IX. Virtual private networks

X. Ethical and legal issues in computer security

STUDENT REQUIREMENTS AND METHOD OF EVALUATION

INSTRUCTIONAL METHODS

1. Explanation by the instructor of important concepts through online PowerPoints and handouts.
2. Class discussion of course material through Forums and Chats.
3. Using microcomputers to solve specific application problems.
4. Several forms of instructional media and class activities to show computer applications.

STUDENT REQUIREMENTS
The final grade in this course will be determined by homework assignments, lab exercises, major exams, and the final exam using the following percentages.

Labs 40%
Tests .......................... 40%
Final Exam ..................... 20%

GRADING SCALE

90 - 100% = A
80 - 89% = B
70 - 79% = C
60 - 69% = D
0 - 59% = F

ASSESSMENT OF STUDENT GAIN

The purpose of assessing student learning at Neosho County Community College is to ensure the educational purposes of the institution are met and appropriate changes are made in program development and classroom instruction to allow for student success.

Pre-assessment ideally begins during the advisement and enrollment process prior to the beginning of the course where the advisor and student determine through the interview process the level of
placement for the student. During the period of the first two weeks of a normal semester, each student will be observed and/or interviewed and initial papers produced will be examined to determine needed competency development throughout the course. Post-assessment to determine gain in competency will be measured at the end of each unit of study.

**Attendance Policy**

1. NCCC values interactive learning which promotes student engagement in the learning process. To be actively engaged, the student must be present in the learning environment.

2. Unless students are participating in a school activity or are excused by the instructor, they are expected to attend class. If a student’s absences exceed one-eighth of the total course duration, (which equates to one hundred (100) minutes per credit hour in a face-to-face class) the instructor has the right, but is not required, to withdraw a student from the course. Once the student has been dropped for excessive absences, the registrar’s office will send a letter to the student, stating that he or she has been dropped. A student may petition the chief academic officer for reinstatement by submitting a letter stating valid reasons for the absences within one week of the registrar’s notification. If the student is reinstated into the class, the instructor and the registrar will be notified. Please refer to the Student Handbook/Academic Policies for more information

3. Absences that occur due to students participating in official college activities are excused except in those cases where outside bodies, such as the State Board of Nursing, have requirements for minimum class minutes for each student. Students who are excused will be given reasonable opportunity to make up any missed work or receive substitute assignments from the instructor and should not be penalized for the absence. Proper procedure should be followed in notifying faculty in advance of the student’s planned participation in the event. Ultimately it is the student’s responsibility to notify the instructor in advance of the planned absence.

**ACADEMIC INTEGRITY**

NCCC expects every student to demonstrate ethical behavior with regard to academic pursuits. Academic integrity in coursework is a specific requirement. Definitions, examples, and possible consequences for violations of Academic Integrity, as well as the appeals process, can be found in the College Catalog, Student Handbook, and/or Code of Student Conduct and Discipline.

**ELECTRONIC DEVICE POLICY**

Student cell phones and other personal electronic devices not being used for class activities must not be accessed during class times unless the instructor chooses to waive this policy.

**NOTE:**

Information and statements in this document are subject to change at the discretion of NCCC. Students will be notified of changes and where to find the most current approved documents.
NON-DISCRIMINATION POLICY

The following link provides information related to the non-discrimination policy of NCCC, including persons with disabilities. Students are urged to review this policy.

http://www.neosho.edu/Departments/NonDiscrimination.aspx

COURSE NOTES