Network Security
CSIT 2720

Class Hours: 3.0 Credit Hours: 4.0
Laboratory Hours: 3.0 Revised: Spring 2011

NOTE: This course is not designed for transfer credit.

Catalog Course Description:

This course provides instruction in the analysis of business requirements for resource security and the design of security solutions in a network operating system. Topics include analyzing business and security requirements and designing security solutions for Windows for access between networks and for communication channels.

Entry Level Standards:

The entering student should be skilled with the Windows 2003 Professional and Server operating systems, Microsoft Active Directory and be able to demonstrate advanced computer knowledge. Problem solving and analytical skills are also important.

Prerequisites:

CSIT 1740

Textbook(s) and Other Course Materials:

Textbook and Supplies:

Suggested Optional Supplementals:
Outside reading, magazines, the Internet, vendor materials.

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, Topic Overview, Schedule; Designing Active Directory for Security</td>
</tr>
<tr>
<td>2</td>
<td>Systems Threats and Risks</td>
</tr>
<tr>
<td>3</td>
<td>Protecting Systems</td>
</tr>
<tr>
<td>4</td>
<td>Network Vulnerabilities and Attacks</td>
</tr>
<tr>
<td>5</td>
<td>Network Defenses</td>
</tr>
<tr>
<td>6</td>
<td>Wireless Network Security</td>
</tr>
</tbody>
</table>
II. Course Goals*:

The course will:

A. Develop/enhance/expand the student’s knowledge of computer systems designed for security. II,III,IV,V, VIII,IX

B. Develop/enhance/expand the student’s knowledge of designing authentication for networks. II,III,IV,IX

C. Develop/enhance/expand the student’s knowledge of planning a secure computer/network administrative structure. II,III,IV,IX

D. Develop/enhance/expand the student’s knowledge of designing group policy and security for Microsoft Windows Servers. II,III,IV,IX

E. Develop/enhance/expand the student’s knowledge of resource and file security. II,III,IV,IX

F. Develop/enhance/expand the student’s knowledge of securing an extranet and securing Internet access. II, III,IV,IX

G. Develop/enhance/expand the student’s knowledge of heterogeneous network secure access. II,III,IV,IX

H. Develop/enhance/expand the student’s knowledge of designing a comprehensive network security plan. I,II,III,IV,IX

I. Develop/enhance/expand the student’s understanding of client service, teamwork skills and good communications skills to resolve problems and complete tasks. I,II,IX,X

*Roman numerals after course objectives reference goals of the Business and Computer Technology department.

III. Expected Student Learning Outcomes*:

The student will be able to:

1. Design computer security to meet business requirements. A,B,C,D,E,F,G,H

2. Design security to meet technical requirements. A,B,C,D,E,F,G,H
3. Design an audit strategy. A,C,D,E,F,G,H
4. Design/plan administrative access to the network. A,B,C,D,E,F,G,H
5. Design/plan group security and user rights; plan deployment of group policy. C,D,E
6. Secure access to file and print resources. C,D,E
7. Design DNS security. F,G
8. Plan security for network services. F,G
11. Manage certification authorities. C,D,E,F,G,H
12. Plan authenticity and integrity of transmitted data. C,D,E,F,G,H
14. Design IPSec policies and deployment; evaluate IPSec scenarios. C,E,G,H
15. Plan RADIUS security. C,E,G,H
17. Identify common firewall strategies. A,B,C,D,E,F,G,H
19. Design/plan security for the Internet. Explain this policy to system users. A,H,I
20. Design an Internet acceptable use policy. Explain this policy to system users. A,H,I
21. Secure access to the Internet by private network users. A,B,C,D,E,F,G,H
22. Design, define, develop, and maintain a comprehensive security plan. A,B,C,D,E,F,G,H,I

* Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

IV. Evaluation:

A. Testing Procedures: **80% of Grade**

   A minimum of three (3) examinations will be given. Each may be cumulative. An alternative is to have regular examinations after each chapter is finished.

B. Laboratory Expectations: **20% of Grade**

   Hands-on learning activities done individually and in teams will also serve as the basis for course evaluation.

C. Field Work:

   N/A
D. Other Evaluation Methods:

N/A

E. Grading Scale: (based on the maximum number of points possible in a semester)

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>93 – 100%</td>
<td>A</td>
</tr>
<tr>
<td>88 – 92%</td>
<td>B+</td>
</tr>
<tr>
<td>83 – 87%</td>
<td>B</td>
</tr>
<tr>
<td>78 – 82%</td>
<td>C+</td>
</tr>
<tr>
<td>73 – 77%</td>
<td>C</td>
</tr>
<tr>
<td>65 – 72%</td>
<td>D</td>
</tr>
<tr>
<td>Below 65%</td>
<td>F</td>
</tr>
</tbody>
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V. Policies:

A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of the Learning Division, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of the Learning Division.

B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one’s own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

C. Accommodations for disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429. More information is available at www.pstcc.edu/departments/swd/.
D. Other Policies:

Computer Usage Guidelines:
College-owned or -operated computing resources are provided for use by students of Pellissippi State. All students are responsible for the usage of Pellissippi State's computing resources in an effective, efficient, ethical and lawful manner.