Class Hours: 3.0  Credit Hours: 4.0
Laboratory Hours: 3.0  Revised: Spring 2010

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 designing of security solutions in a Windows 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 2700 or consent of instructor

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>
</tbody>
</table>
II. Course Objectives*:

A. Demonstrate knowledge of an active directory structure designed for security. II,III,IV

B. Demonstrate knowledge of designing authentication for a Microsoft Windows 2003 network. II,IV

C. Demonstrate knowledge of planning a Microsoft Windows 2003 administrative structure. III,IV

D. Demonstrate knowledge of designing group policy and security for Microsoft Windows 2003. III,IV

E. Demonstrate knowledge of resource and file security. II,IV

F. Demonstrate knowledge of securing Microsoft Windows 2003-based computers. II,IV,VIII

G. Demonstrate knowledge of designing services security for Windows 2003. II,III,IV,VII

H. Demonstrate knowledge of planning a PK (Public Key) infrastructure. III,IV

I. Demonstrate knowledge of securing data at the application layer of the OSI model. III,IV

J. Demonstrate knowledge of securing data with IPSec (Internet Protocol Security). III,IV

K. Demonstrate knowledge of securing access for remote users and networks. III,IV

L. Demonstrate knowledge of securing an extranet and securing Internet access. III,IV

M. Demonstrate knowledge of heterogeneous network secure access. III,IV

N. Demonstrate knowledge of designing a comprehensive network security plan. III,IV

O. Demonstrate client service, teamwork skills and good communications skills to resolve problems and complete tasks. I,II,IX

*Roman numerals after course objectives reference goals of the CSIT program.

III. Instructional Processes*:
Students will:

1. Use operating systems commands and utilities to perform practical tasks for network computing. *Technological Literacy Outcome, Transitional Strategy, Active Learning Strategy*
2. Demonstrate knowledge of networking, electronic communication, and associated subjects. *Technological Literacy Outcome*
5. Handle and examine modern computing devices. *Technological Literacy Outcome, Transitional Strategy, Active Learning Strategy*
6. Prepare documents and presentations for management explaining computer networks and communications hardware/software, etc. to meet user requirements. *Communication Outcome, Technological Literacy Outcome, Transitional Strategy, Active Learning Strategy*
7. Practice elements of the work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. *Transitional Strategy*

*Strategies and outcomes listed after instructional processes reference TBR's goals for strengthening general education knowledge and skills, connecting course work to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.*

**IV. Expectations for Student Performance***:

Upon successful completion of this course, the student should be able to:

1. Design computer security to meet business requirements. A,B,C,D,O
2. Design security to meet technical requirements. A,B,C,D,O
3. Design a forest structure. A,C,O
4. Design a domain structure. A,C,O
5. Design an organizational unit structure. A,C,O
6. Design an audit strategy. A,C,D,E,F,G,O
11. Design/plan administrative group membership. C,D,O
12. Design/plan administrative access to the network. C,D,O
13. Design/plan group security and user rights; plan deployment of group policy. C,D,
14. Secure access to file and print resources. B,C,D,E,F,O 
15. Plan EFS security. E,F,G,O 
17. Plan/deplo OF security by using security templates. E,F,G,O 
25. Design/plan a Public Key (PK) infrastructure. H,I,K,O 
28. Plan authenticity and integrity of transmitted data. F,G,I,J,O 
29. Plan encryption of transmitted data. J,O 
30. Design IPSec policies and deployment; evaluate IPSec scenarios. J,O 
31. Design/plan remote access security (for users and networks). J,K,L,O 
32. Design remote access policy. K,L,M,N,O 
33. Plan RADIUS security. K,L,M,N,O 
34. Design/plan security for an Extranet. K,L,M,N,O 
35. Identify common firewall strategies. K,L,M,N,O 
36. Secure Internet-accessible resources in a DMZ; secure data flow through a DMZ. K,L,M,N, 
38. Design/plan security for the Internet. J,K,M,N,O 
39. Design an Internet acceptable use policy. M,N,O 
40. Secure access to the Internet by private network users. G,J,K,M,N,O 
41. Restrict access to content on the Internet. E,F,G,I,M,O
42. Audit Internet access. M,N,O
43. Design secure Internet access. M,N,O
44. Design interoperability between Windows 2003 and heterogeneous networks. M,N,O
45. Design directory synchronization and integration. M,N,O
46. Secure Windows 2003 user access to heterogeneous networks. M,N,O
47. Design, define, develop, and maintain a comprehensive security plan. A,C,D,E,F,G,K,L,M,N,O

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures:

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

B. Laboratory Expectations:

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:

Other assessment activities will consist of special projects, research papers, team activities, essays, short answer documents, or other work assigned.

E. Grading Scale:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</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>
</table>

VI. Policies:

A. Attendance Policy:

This course uses software and hardware not normally available out-of-class to students. Regular attendance is required for success in this class. Refer to the Class Policies document for more information.

Pellissippi State Community College expects students to attend all scheduled instructional
activities. As a minimum, students in all courses MUST BE PRESENT for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course outside. *(Pellissippi State Online Catalog)*

B. Academic Dishonesty:

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions which may be imposed through the regular Pellissippi State procedures as a result of academic misconduct, the instructor has the authority to assign an F or a zero for the exercise or examination or to assign an F in the course. *(Pellissippi State Online Catalog)*

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 134 or 126 or by phone: 694-6751(Voice/TTY) or 539-7153. More information is available at [www.pstcc.edu/departments/swd/](http://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. *(Pellissippi State Online Catalog)*