BERGEN COMMUNITY COLLEGE

Assessment Report for (Department and/or Program): Information Technology

Academic Chair: William Madden

Assessment Period:2011-2013 academic year

Submitted by: William Madden, December 20, 2011

1. Intended Outcome (Goal):

Our graduates will be able to demonstrate their knowledge of the installation, configuration, and maintenance of server and client operating systems, and the management of network resources including users, printers, and shares.

2. General Education Requirement(s) to which the intended outcome relates:

GE requirement #4: Technological Competency or Information Literacy – (Technology) Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

3. Section(s) of the Strategic Plan to which the intended outcomes relates:

SP requirement #3.1: Renew academic programs and develop new credit and noncredit programs and classes to meet career and workforce needs, the demands of the new economy, and changing demographics

4. Means of assessment, sources of data, and desired result:

We will administer a multiple choice pre- and post-test in all sections of the courses described below in Spring 2012 and Fall 2012. The questions on the test instrument will be designed to collect quantitative and qualitative information assessing the students' skill level with, and understanding of, the subject matter in both courses at the beginning and, then again, at the conclusion of both courses. We will collect data in Spring 2012 for two anticipated sections of INF-232 (Windows Client – only offered in the Spring) and will collect data in Fall 2012 for two anticipated sections of INF-252 (Windows Server – only offered in the Fall). The pre- and post-tests are below, after Section 6. Addendum (8/2/2012): the department agreed to extend the pre- and post-tests to two sections of a second class in the Information Technology Programs: INF-160 Networking Technologies and Data Communications. A copy of the pre/post-test instrument is also included below, following Section 6. Since there are two sections of this course being offered every semester, the pre/post-test for this course will be administered in Spring 2012 and Fall 2012. In all cases, there are both daytime and evening sections of all these courses offered. We do anticipate differences in performance between daytime sections and evening sections; these assessments should be able to help us quantify what have hitherto been anecdotal observations concerning differences between the two populations.

The survey instrument will be developed by the faculty of the Information Technology department, with consultation from Institutional Planning and Research, during the Spring 2012 semester. We will also involve our Information Technology Community Advisory Committee in the development of appropriate questions for the survey, particularly for questions that might be able to assess students' future employability.

Possible challenges in designing the survey instruments: part of a successful outcome for our students involves the development of particular skillsets. These skillsets are best assessed in a practicum situation. How we can capture information via a survey instrument that adequately describes students' relative success with regard to the development of the appropriate skillsets, will be a challenge.

Desired results:

Post-Test: 70% of students will achieve at least a score of 70% on the post-test at the end of the semester.
There will be a 100% improvement between the average pre-test and average post-test score.

5. Summary of Results:

6. Recommendations for improvement:

Windows 7 Evaluation Exam – INF-232

1. A RAID-5 array is composed of four 100Gb disks. How much space is available for data storage?
    a. 100 Gb
    b. 200 Gb
    c. 300 Gb
    d. 400 Gb
2. When combining NTFS permissions and share permissions the result is:
    a. Least restrictive(most permissions)
    b. Most restrictive(fewest permissions)
    c. Addition of all permissions
    d. Difference between the types of permissions
3. Which hard drive partition contains the operating system files?
    a. Boot partition
    b. System partition
    c. Operating partition
4. The term profile in Windows 7 refers to:
    a. The version of Windows
    b. The permissions of the user
    c. The desktop and environment configurations
    d. The role assigned to the user
5. Audit Object Access is necessary to be able to audit:
    a. Files and folders
    b. Active Directory objects
    c. Logon and logoff events
    d. System events
6. The Interactive group refers to:
    a. Authorized users
    b. Active users thru the peer network
    c. Users accessing computer directly
    d. Users active thru the internet

7. Which Windows registry key is the administrator most likely to make changes to?
    a. HKEY_CURRENT_USER
    b. HKEY_LOCAL_MACHINE
    c. HKEY_USERS
    d. HKEY_CURRENTCONFIG
8. When are CHAP and MS-CHAP used?
    a. To access a local network
    b. To access the Internet
    c. When dialing in thru a modem
    d. For a VPN
9. The purpose of Auditing in Windows 7 is to:
    a. Determine the cost of running it
    b. Determine the efficiency of the packet rate
    c. Record occurrences of specific operating system events
    d. Only used during a malfunction
10. If you want to capture a packet and read its contents you must use:
    a. Performance Monitor
    b. Network Monitor
    c. System Monitor
    d. Resource Monitor
11. When a file is moved from a compressed folder to an uncompressed folder on the same partition what happens?
    a. It is uncompressed
    b. It remains compressed
    c. The move is not permitted

This assessment was used in INF-160

1. What is the basic purpose of a local area network (LAN)?
    A. To interconnect networks in several different buildings
    B. To connect two or more computers together so they can share resources
    C. To interconnect 2 to 10 routers
    D. To make routers unnecessary

2. Which of the following describes a VLAN?
    A. It is a device that provides IP addresses to hosts.
    B. It uses firewalls.
    C. It virtually separates subnets using switches.
    D. It virtually separates subnets using routers.

3. IP resides at which layer of the OSI model?
    A. Application
    B. Data Link
    C. Network
    D. Physical

4. Layer 2 of the OSI model is named the _____.
    A. Application layer
    B. Network layer
    C. Transport layer
    D. Data Link layer

5. You need to connect a hub to a switch. You don't like this idea because you know that it will create congestion. What type of cable do you need to use to connect the hub to the switch?
    A. EtherIP
    B. Crossover
    C. Straight-through
    D. Cable Sense, Multiple Access

6. Your boss asks you why you just put in a requisition to buy several switches. He said he just bought you several hubs five years ago! Why are you requesting the switches?
    A. Because each switch port is its own collision domain.
    B. The cable connecting devices to the hub wore out, and switches were cheaper than new cable.
    C. There were too many broadcast domains, and a switch breaks up broadcast domains by default.

D. The hubs kept repeating signals but quit recognizing frames and data structures.

7. Which device would connect network segments together, creating separate collision domains for each segment but only a single broadcast domain?
   A. Hub
   B. Router
   C. Switch
   D. Modem

8. Most Application-layer protocols only use UDP or TCP at the Transport layer. Which of the following can use both?
   A. TCP
   B. Microsoft Word
   C. Telnet
   D. DNS

9. HTTP, FTP, and Telnet work at which layer of the OSI model?
   A. Application
   B. Presentation
   C. Session
   D. Transport

10. Which of the following IP addresses are not allowed on the Internet? (Choose all that apply.)
    A. 11.255.255.1
    B. 10.1.1.1
    C. 172.33.255.0
    D. 192.168.0.1

11. What is the subnetwork address for a host with the IP address 200.10.5.168/28?
    A. 200.10.5.156
    B. 200.10.5.132
    C. 200.10.5.160
    D. 200.10.5.0
    E. 200.10.5.255

12. If you wanted to verify the local IP stack on your computer, what would you do?
    A. ping 127.0.0.0
    B. ping 127.0.0.1
    C. telnet 1.0.0.127
    D. ping 127.0.0.255
    E. telnet 255.255.255.255

13. The OSI model uses an encapsulation method to describe the data as it is encapsulated at each of its layers. What is the encapsulation named at the Data Link layer?
    A. Bits
    B. Packets

C. Frames
D. Data
E. Segments

14. Where does a Data Link layer frame have to carry a Network layer packet if the packet is destined for a remote network?
    A. Router
    B. Physical medium
    C. Switch
    D. Another host

15. You need to break up broadcast domains in a Layer 2 switched network. What strategy will you use?
    A. Implement a loop-avoidance scheme
    B. Create a flatter network structure using switches
    C. Create a VLAN
    D. Disable spanning tree on individual ports

16. IPSec is defined at what layer of the OSI model?
    A. Network
    B. Physical
    C. Layer 4
    D. Layer 7

17. Someone calls you and asks for your bank-account number because the bank is having a problem with your account. You give them this information and later find out that you were scammed. What type of attack is this?
    A. Phishing
    B. Calling-scam
    C. Analog-scam
    D. Trust-exploration attack
    E. Man-in-the-middle attack
    F. Rogue access point

18. Which three of the following are types of denial of service attacks?
    A. Ping of Death
    B. Stacheldraht
    C. SYN flood
    D. Virus FloodSyn

19. You want to stop a hacker in his/her tracks. Which of the following tools is/are proactive in providing this service?
    A. Access control list (ACL)
    B. Content filtering
    C. Security zones
    D. Intrusion Prevention System (IPS)

E. Network Address Translation
F. Virtual LAN's

20. You connected your company to the Internet, and security is a concern. What should you install?
    A. Higher-quality cables
    B. Firewall
    C. DNS
    D. Switches

21. Which of the following are WAN protocols or technologies? (Choose all that apply.)
    A. ATM
    B. ISDN
    C. MPLS
    D. RIP

22. The rate at which a frame-relay switch agrees to transfer data is referred to as _____.
    A. BE
    B. FECN
    C. CIR
    D. BECN

23. Which tool is used to attach ends to network cables?
    A. Punch-down tool
    B. Crimper
    C. VLAN tool
    D. Strippers
    E. ARP tool

24. Which of the following are considered cabling issues? (Choose all that apply.)
    A. Crosstalk
    B. Shorts
    C. Open impedance mismatch
    D. DNS configurations

25. A workstation gives an error message to a user. The message states that a duplicate IP address has been detected on the network. After developing a hypothesis, what should the next step be according to the standard troubleshooting model?
    A. Test and observe an action plan.
    B. Determine if anything has changed.
    C. Implement an action plan.
    D. Document the solution and the entire process.

26. Which network-performance-optimization technique can delay packets that meet certain criteria to guarantee usable bandwidth for other applications?
    A. Traffic shaping

B. Jitter control
C. Logical network mapping
D. Load balancing
E. Access lists

27. You need to optimize network traffic by spreading it across multiple connections. Which strategy should be used?
    A. Load balancing
    B. Traffic shaping
    C. Add VLAN's
    D. A 1Gbps connection
    E. Following the regulations