SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

SAULT COLLEGE

COURSE OUTLINE

COURSE TITLE: Network Certification II

CODE NO. : CSN305   **SEMESTER:** Fall 2011

PROGRAM: Computer Engineering Technologist - Networking

AUTHOR: Dan Kachur / Cindy Trainor

DATE: Sept. 2011   **PREVIOUS OUTLINE DATED:** Dec. 2011

APPROVED: "Penny Perrier"   June/11

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                 CHAIR   **DATE**

TOTAL CREDITS: 4

PREREQUISITE(S): CSN210

HOURS/WEEK: 3 Hours / 16 Weeks

I.   COURSE DESCRIPTION:

This course continues the preparation for certification in a networking area of specialization. At the present time the courses and exams identified as the Microsoft™ Certified IT Professional (MCITP) requirements will be the basis for this course and one previous course (CSN210 – Network Certification I). The curriculum delivered in this course will help students prepare for Microsoft's 70-642 exam, which is titled **Windows Server 2008 Network Infrastructure, Configuring**. Lectures on the important topics will be provided with lab activities designed to develop hands-on skills. Students will use available resources, MCITP exam preparation guides, sample tests and hands-on lab activities to prepare for the specific objectives as published by Microsoft™. The chosen track for this course will be the Microsoft Windows 2008 Server curriculum.

Rationale:

Windows Server 2008 is generating demand all over the world for skilled IT professionals who can support this new Windows Server operating system. IDC, a global analyst firm, estimates that there will be more than 3.5 million deployments of Windows Server 2008 in its first year.

Demonstrating in-depth technology skills: MCITP
The Microsoft Certified IT Professional (MCITP) credential is the leading certification for Windows Server 2008, providing widely recognized, objective validation of your ability to perform critical, current IT job roles by using Microsoft technologies to their best advantage.
The building blocks of the Windows Server 2008 MCITP certification are Microsoft Certified Technology Specialist (MCTS) pre-requisites certifications designed to validate your skills on the features and functionality of key technology areas in Windows Server 2008, leading to the MCITP Certification.
Earn an MCITP: Server Administrator certification to demonstrate your leadership and problem-solving skills in working with Windows Server 2008.
Server administrators are recognized among their peers and managers as leaders in the daily operations management of Windows Server 2008. Demonstrate and communicate your ability to administer Windows Server 2008 systems and increase your organization's return on technology investment by earning the MCITP: Server Administrator certification.

II.   LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1.   **Install and Configure Network Protocols**
     Potential Elements of the Performance:
     - Install and configure TCP/IP
     - Configure IPv4 and IPv6 addressing
     - Configure network bindings
     - Configure TCP/IP packet filters
     - Configure and troubleshoot network protocol security
     - Manage and monitor network traffic
     - Enable IPSec
     - Configure IPSec for transport mode and tunnel mode
     - Configure IPSec Authentication Header (AH)
     - Configure IPSec Encapsulating Protocol (ESP)
     - Customize IPSec policies and rules
     - Establish Static Routing tables
     - Work with Routing Internet Protocol (RIP)

2.   **Install, Configure and Manage a DNS Server**
     Potential Elements of the Performance:
     - Install the DNS Server service
     - Configure a root name server, zones and a caching-only server
     - Configure a DNS client
     - Add "A" and "cname" records
     - Configure zones for dynamic updates
     - Test for dynamic DNS via Client logins
     - Implement a delegated zone for DNS
     - Manually create DNS resource records
     - Manage and monitor DNS

3.   **Install, Configure and Manage a DHCP Server**
     Potential Elements of the Performance:
     - Install the DHCP Server service
     - Create and manage DHCP scopes, superscopes, and multicast scopes
     - Configure DHCP for DNS integration
     - Authorize a DHCP server in Active Directory™
     - Manage and monitor DHCP
     - Perform DHCP Relay

4. **Configure, Manage and Troubleshoot Remote Access Services**
    Potential Elements of the Performance:
    - Configure inbound connections
    - Create a remote access policy
    - Configure a remote access profile
    - Configure a virtual private network (VPN)
    - Configure Routing and Remote Access for DHCP Integration
    - Manage and monitor remote access
    - Configure remote access security and authentication and encryption protocols
    - Create and implement remote access policies
    - Configure NAT properties and interfaces
    - Install Internet Connection Sharing
    - Establish Network Access Protection including DHCP and VPN enforcement
    - Configure Network Authentication for Kerberos, 802.1x and RAS using MS-Chap, Ms-Chap2 and EAP

5. **Install and Configure Name Resolution**
    Potential Elements of the Performance:
    - Learn and test the 5 step name resolution process for both DNS and WINS
    - Configure a "hosts" file for Host Name Resolution
    - Create an "lmhosts" file for NetBios name resolution

6. **Install and Configure Wireless Access Points**
    Potential Elements of the Performance:
    - Set Service ID (SSID)
    - Enable Wired Equivalent Privacy (WEP)
    - Enable Wi-Fi Protected Access (WAP) and (WAP2)
    - Contrast Ad Hoc vs. infrastructure more
    - Test Network Wireless Security

7. **Install and Configure Distributed File Systems**
    Potential Elements of the Performance:
    - Install and configure a Root DFS (Distributed File System)
    - Using 2 Domain Controllers, install and configure a Domain-Based DFS (Distributed File System)
    - Perform DFS replication

III.   TOPICS:

1.   Network Protocols
2.   DNS (Domain Name Service)
3.   DHCP (Dynamic Host Configuration Protocol)
4.   RAS (Remote Access Service)
5.   Name Resolution
6.   Wireless Access Points
7.   DFS (Distributed File Systems)

IV.   REQUIRED RESOURCES/TEXTS/MATERIALS:
USB 2.0, IDE External Hard Drive Enclosure with Hard Drive
Or
USB 2.0 to Hard Drive Adapter and Hard Drive

Textbook:

MCTS Guide to Microsoft Windows Server 2008
Network Infrastructure Configuration

ISBN: 1-4329-0236-X
Author: Michael Bender
Publisher: Course Technology

V. EVALUATION PROCESS/GRADING SYSTEM:

Tests (2 @ 20% each)	40 %
Quizzes	20 %
Participation and Attendance	10 %
Lab Assignments	30 %

NOTE:

This evaluation scheme is subject to change if circumstances warrant. Any changes will be discussed with students and reported in writing before implementation.

It is necessary to pass both the theory and the lab part of this course. For example, it is not possible to pass the course if a student has a failing average in the written tests but is passing the lab portion, (or vise versa).

The following semester grades will be assigned to students:

Grade	Definition	Grade Point Equivalent
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00

CR (Credit)	Credit for diploma requirements has been awarded.
S	Satisfactory achievement in field /clinical placement or non-graded subject area.
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

VI.   SPECIAL NOTES:

Course Outline Amendments:
The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Contact Information:

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VII.   COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.