

## SYLLABUS

**DIVISION:** Business and Engineering Technology

**REVISED:** SPRING 2014

**CURRICULA IN WHICH COURSE IS TAUGHT:** IST, Information Systems Technology

**COURSE NUMBER AND TITLE:** ITN 104 – Maintaining Servers in the Networked Infrastructure

**CREDIT HOURS:** 4 HOURS/WK **LEC:** 3 HOURS/WK **LAB:** 2 **LEC/LAB COMB:** 5

**I. CATALOG DESCRIPTION:** ITN 104 - Provides instruction on how to implement, manage, and maintain a server environment. Also included in this instruction will be the installation and configuration of email servers, virtual server systems and server farms, along with secured communications across local and wide area networks. Server platforms currently supported include Windows 2008 Server and Linux platforms.

**II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES:** ITN 104 will address the following Information Technology Outcomes:

- Implement Information Technology skills required by software applications.
- Apply methodologies to stay current in IT offerings, trends and certifications.
- Apply analytical and problem solving skills for computer system design, planning and support.
- Design, code, test, debug, and document software needed for computer system implementation and maintenance.
- Apply current IT industry standards, protocols, and techniques.
- Use instructional applications and material which could lead towards industry certification.

Please Note: The overall Learner Outcomes from all of the course requirements for the A.A.S. Degrees in IT are more in-depth than those of the Career Studies Certificates. However, the IT courses that are the same in both the A.A.S. Degrees and the Certificate Programs carry the same Learner Outcomes and are identical in content. Please review the DCC Catalog or visit the DCC Web Site for more details.

**III. REQUIRED BACKGROUND:** ITN 103

**IV. COURSE CONTENT:**

- Windows 2008 networking overview
- TCP/IP addressing and subnetting
- Dynamic Host Configuration Protocol (DHCP)
- Domain Name System (DNS)
- Windows Internet Name Service (WINS)
- Remote Access Service (RAS)
- IP Routing using Windows 2008 Server
- IP security in Windows 2008 Server
- Network Address Translation (NAT) in Windows 2008 Server
- Configuring Certificate Services in Windows 2008 Server

**V. THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE. STUDENTS WILL:**

- X Communication
- X Critical Thinking
- X Cultural and Social Understanding Information Literacy
- X Personal Development
- X Quantitative Reasoning
- X Scientific Reasoning

**VI. LEARNER OUTCOMES****VII. EVALUATION**

Upon conclusion of this course the student will be able to define, discuss, and demonstrate knowledge in the following concepts.	
<b>Examine OS Networking Concepts</b>	Lab exercises and written test - Determine the correct OS version needed to perform course lab assignments and install as necessary.
<b>Plan network protocols, compatibility, active directory, and security</b>	Lab exercises and written test - Discuss and configure TCP/IP settings, compatibility issues between servers, AD settings, and the impact on network security.
<b>Plan for Advanced DNS Server Configurations</b>	Lab exercises and written test - Discuss DNS in detail. Configure advanced DNS settings to support the Enterprise including Name Servers, Forward and Reverse Lookups, and DNS resolution settings.
<b>Plan a File Server Deployment</b>	Lab exercises and written test - Discuss permission issues that arise during a file server deployment. Configure NTFS permissions and utilize Group Policies to allow access to shares on the network.
<b>Manage DFS and Disk Quotas in the Enterprise</b>	Lab exercises and written test - Utilizing server software, install and configure a DFS server then deploy a Quota strategy to support local users.
<b>Install and configure Windows Hyper-V Virtualization Software</b>	Lab exercises and written test - Utilizing server software, install and configure Hyper-V. After installation, install Windows 7 as a virtual client and utilize to access network resources.
<b>Configure RRAS Server Settings including all components of Routing and Remote Access</b>	Lab exercises and written test - Utilizing server software, deploy RRAS and include the following services: RIP, NAT, and Static Routes.
<b>Set up user accounts and client connectivity permissions to utilize RRAS</b>	Lab exercises and written test - Create user account that allows for access to the RRAS server using AD.
<b>Set up Internet and network interoperability</b>	Lab exercises and written test - Utilizing two NIC cards, demonstrate the connections required for LAN communications as well as WAN communications. This lab will utilize RRAS for these configurations.
<b>Plan and Deploy a Remote Access VPN Solution to also include external remote access through Telco</b>	Lab exercises and written test - Utilizing RRAS, create a VPN solution and deploy to the Enterprise Servers. Demonstrate the need for encryption and the usage of older technologies including standard 56k modems for off-site repair/configuration of server.
<b>Install and manage printers over an Enterprise Network</b>	Lab exercises and written test - Demonstrate the need for network printing and include the sharing of printers for multi-client access. Perform lab exercises to create these connections.
<b>Plan for the utilization of Windows Server Update Services</b>	Lab exercises and written test - Discuss in detail the need for networks to utilize this bandwidth saving feature of the server and configure WSUS to download all necessary updates for both the 2008 server and Windows 7 platforms. After downloading, deploy updates as needed.
<b>Set up Network monitoring and optimization</b>	Lab exercises and written test - Discuss the impact each of the services we have installed and configured and how much system resources are affected. Other topics discussed includes the new Health Services that monitors network resources to determine if items such as firewall and anti-virus

	software are configured and up-to-date.
<b>Build Networks – Design</b>	Class Project – Utilize network diagramming software to build a custom network design that reflects an enterprise network environment. Submit design for grading.