SYLLABUS

DIVISION: Business and Engineering Technology   **REVISED:** SPRING 2014

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

COURSE NUMBER AND TITLE: **ITN 251 – Implementing Secure Converged WAN-Cisco**

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

I.   **CATALOG DESCRIPTION:** ITN 251 - Focuses on in-depth instruction to a variety of wide area networking technologies and their implementation. Course content includes POTS and analog network connectivity, ISDN (both BRI and PRI), PPP, Cisco AAA Security System, and Frame Relay.

II.   **RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES:** ITN 251 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 157 or Approved by instructor

IV.   **COURSE CONTENT:**
- Remote Network Connectivity Requirements
- Teleworker Connectivity
- IPSec VPNs
- Frame Mode MPLS Implementation
- Cisco Device Hardening
- Cisco IOS Threat Defense Features

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

    X   Communication
    X   Critical Thinking
         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.	
Configuring Remote Network Connectivity	Lab exercises and online test - Understanding of the Hierarchical Network Model. Interpret the Cisco Enterprise Architecture. Determine the Remote Connection Requirements in a Converged Network. Analyze Remote Connection Considerations. Identify the Intelligent Information Network Analyze the Cisco SONA Framework.
Identifying Teleworker Connectivity	Lab exercises and online test - Describe Remote Connection Topologies for the Teleworker. Describe Cable Technologies. Deploy Cable System Technologies. Describe DSL Technologies. Deploy ADSL in the Enterprise. Configure the CPE as the PPPoE. Troubleshooting Broadband ADSL Configurations.
Configuring IPSec VPN	Lab exercises and online test - Understanding of VPN Technologies. Understand the use of IPSec Components and IPSec VPN Features. Implement Site-to-Site IPSec VPN Operations. Configure GRE Tunnels over IPSec. Configure High-Availability VPNs. Implement Cisco Easy VPN. Configure Easy VPN Server using Cisco SDM. Implement the Cisco VPN Client.
Implementation of Frame Mode MPLS	Lab exercises and online test - Understand the purpose for the MPLS Conceptual Model. Assign MPLS Labels to Packets. Implement Frame Mode MPLS. Describe MPLS VPN Technologies.
Configuring Cisco Device Hardening	Lab exercises and online test - Explain the concept of Thinking Like A Hacker. Mitigate Network Attacks. Understand Network Attacks Using Intelligence Methods. Disable Unused Cisco Router Network Services and Interfaces. Secure the Cisco Router Administrative Access. Configure Role-Based CLI. Mitigate Threats and Attacks with Access Lists. Securing Management and Reporting Features. Configure SNMP and NTP Services Configure AAA on Cisco Routers.
Configure Cisco IOS Threat Defense Features	Lab exercises and online test - Understand the Cisco IOS Firewall Features. Configure the Cisco IOS Firewall from the CLI. Configure Basic and Advanced Firewall Features using Software Wizards. Understand and Configure the Cisco IOS IPS Feature.