

## Master Syllabus

### CIS 2426 - Connecting Networks

**Division:** Business and Public Services

**Department:** Computer Information Systems

**Credit Hour Total:** 4.0                      **Lecture Hrs:** 4.0

**Prerequisite(s):** CIS 2416 AND CIS 2421

**Other Prerequisite(s):** Other CIS 2416 and CIS 2421 must be completed within the past two years.

**Date Revised:** December 2015

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### Course Description:

This course focuses on Wide Area Network (WAN) technologies and services required by converged applications in a complex network. Students will learn the selection criteria for devices and technologies to meet WAN requirements. Configuring devices and resolving issues with data link protocols will be emphasized.

### General Education Outcomes:

- Critical Thinking/Problem Solving Competency
- Computer Literacy Competency
- Information Literacy Competency

### Course Outcomes:

#### Network Policy

Demonstrate the capabilities of Policy and show how it can be implemented in a network using Policy Manager to effectively and efficiently manage Policy enabled enterprise networks to include the use of NetSight, traffic classification, Policy Manager, policy design, use QoS/CoS, scripting and dynamic policy.

**Assessment Method:** Simulations  
**Performance Criteria:**

Obtain score of 80% or higher on assignments.

**Assessment Method:** Standardized national examinations  
**Performance Criteria:**

Obtain score of 80% or higher on exams.

#### Virtual Private Networks (VPNs)

Explain the concepts, processes and underlying protocols related to configuring VPNs. Explain the benefits associated with their use.

**Assessment Method:** Simulations  
**Performance Criteria:**

Obtain score of 80% or higher on assignments.

**Assessment Method:** Standardized national examinations  
**Performance Criteria:**

Obtain score of 80% or higher on exam.

#### Network Address Translation (NAT)

Configure, verify and troubleshoot IP services on a router. Configure NAT operations and troubleshoot related issues.

**Assessment Method:** Simulations  
**Performance Criteria:**

Obtain score of 80% or higher on assignments.

**Assessment Method:** Standardized national examinations  
**Performance Criteria:**

Obtain a score 80% or higher on exam.

#### Network Design

Explain network design concepts, principles, models and architectures and the benefits that are obtained by using a systematic approach.

**Assessment Method:** Simulations  
**Performance Criteria:**

Obtain score of 80% or higher on assignments.

**Assessment Method:** Standardized national examinations  
**Performance Criteria:**

Obtain a score 80% or higher on exam.

#### Network monitoring

Explain, describe and configure the three protocols that a network administrator can use to monitor the network (Syslog, SNMP and Netflow). Describe the different strengths and weaknesses of each protocol and understand what is happening on a network.

**Assessment Method:** Simulations  
**Performance Criteria:**

Obtain score of 80% or higher on assignments.

**Assessment Method:** Standardized national examinations  
**Performance Criteria:**

Obtain score of 80% or higher on exams.

**Wide Area Network (WAN) connection options**

Describe the various technologies used for connecting to a WAN. Troubleshoot WAN implementation issues. Configure and verify various Layer 2 protocols (HDLC, PPP, Frame Relay and Broadband) on routers.

**Assessment Method:** Simulations  
**Performance Criteria:**

Obtain score of 80% or higher on assignments.

**Assessment Method:** Standardized national examinations  
**Performance Criteria:**

Obtain a score 80% or higher on exam.

**Outline:**

Wide Area Network (WAN) connection options  
Network Address Translation (NAT)  
Network Design  
Virtual Private Networks (VPNs)  
Network Monitoring  
Network Policy