Sinclair Community College
444 E. Third St.
Dayton, OH 45402

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: January 2014

Course Description:

This course focuses on the Wide Area Network (WAN) technologies and network services required by converged applications in a complex network. In this course, students will learn different WAN technologies and their benefits; the operations and benefits of Virtual Private Networks (VPNs); and, various network architectures. Students will be able to configure and troubleshoot serial connections, broadband connections and IPSec operations. They will also learn to monitor and troubleshoot network operations using syslog, SNMP and NetFlow.

General Education Outcomes:

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

Course Outcomes:

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.

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.

Outline:

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