

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. CST

COURSE NUMBER: 1500

NUMBER OF CREDITS: 3

Lecture: 2 Lab: 1 OJT: 0

Course Title:
Routers and Switches

Catalog Description:
Routers and Switches focuses on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLANs) and security concepts. Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate LAN security threats, and configure and secure a basic WLAN.

Prerequisites or Necessary Entry Skills/Knowledge:
CST 1190

FULFILLS MN TRANSFER CURRICULUM AREA(S) (*Leave blank if not applicable*)

- ☐ Goal 1: Communication: By meeting the following competencies:
- ☐ Goal 2: Critical Thinking: By meeting the following competencies:
- ☐ Goal 3: Natural Sciences: By meeting the following competencies:
- ☐ Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
- ☐ Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
- ☐ Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
- ☐ Goal 7: Human Diversity: By meeting the following competencies:
- ☐ Goal 8: Global Perspective: By meeting the following competencies:
- ☐ Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
- ☐ Goal 10: People and the Environment: By meeting the following competencies:

Topics to be Covered
Switching Concepts, VLANs and InterVLAN Routing
Redundant Networks
Available and Reliable Networks
L2 Security and WLANs
Routing Concepts and Configuration

Student Learning Outcomes

Configure devices by using security best practices.

Explain how Layer 2 switches forward data.

Implement VLANs and trunking in a switched network.

Troubleshoot inter-VLAN routing on Layer 3 devices.

Implement DHCPv4 to operate across multiple LANs.

Configure dynamic address allocation in IPv6.

Implement switch security to mitigate LAN attacks.

Explain how WLANs enable network connectivity.

Troubleshoot static and default route configurations.

Is this course part of a transfer pathway: Yes ☐ No ☒

**If yes, please list the competencies below*

Revised Date: 3/29/2022