



MASTER COURSE OUTLINE

A. CPRO 1930 Cisco Networking IV

B. COURSE DESCRIPTION:

This course provides the knowledge and skills needed to succeed in networking careers such as network technicians, network administrators, and network engineers. Upon completion of this course, students have a thorough understanding of VPN technology, router security, and Wide Area Networking (WAN) basics. This course helps prepare students for industry standard certifications. Prerequisites: CPRO 1900, CPRO 1910, and CPRO 1920.

(3 Cr – 3 lect, 0 lab)

C. *Core Theme: Critical Thinking

D. RIVERLAND INSTITUTIONAL LEARNING OUTCOMES:

This course addresses the following Riverland Institutional Learning Outcome(s):

- ILO 1: critical thinking (*Core Theme Goal 2*)
- ILO 2: awareness of the larger global community (*Core Theme Goal 7 or 8*)
- ILO 3: ethical, engaged citizenship (*Core Theme Goal 9 or Goal 10*)
- ILO 4: communication and collaboration (*Discipline Goal 1 and by any learning outcome(s) involving communication or collaboration*)

E. MAJOR CONTENT AREAS:

- Voice Over IP (VOIP) technology
- Video Over IP applications on a network
- Security policies
- Network security measures
- Network security threats
- Network security countermeasures
- Security appliance
- Security applications
- Access Control Lists (ACLs)
- Secure Telnet and SSH router
- Network Address Translation (NAT)
- Wide Area Network (WAN) technology
- Point-to-Point Protocol (PPP)
- Virtual Private Network (VPN) technology

F. GOAL TYPES, OBJECTIVES, AND OUTCOMES:

<u>GOAL</u>	<u>OBJECTIVES</u> Students will be able to	<u>OUTCOMES</u> The student will successfully
<u>*Critical Thinking</u>	imagine and seek out a variety of possible goals, assumptions, interpretations, or perspectives which can give alternative meanings or solutions to given situations or problems.	1. identify and analyze current security threats and develop a security plan designed to mitigate the identified security threats.
<u>CS</u>	determine which router services should be used to meet differing network objectives.	1. configure router services on network devices to implement a specific set of given network requirements.
<u>CS</u>	design and implement a firewall ACL policy to control network access.	1. configure security access control on network devices that meet the stated network security requirements.
<u>CS</u>	implement NAT and PAT address translation.	1. configure NAT and PAT address translation on routers that meet stated network security requirements.
<u>CS</u>	determine an appropriate virtual private network (VPN) technology implementation based on customers current network properties and future requirements.	1. configure and implement a VPN that meets a given network design.
<u>CS</u>	communicate with end users by formulating questions and providing answers that are appropriate to the end users' level of technological literacy.	1. guide a classmate through the resolution of an access control list misconfiguration problem using verbal communication in a simulated helpdesk scenario.
<u>CS</u>	demonstrate proper troubleshooting methodologies and techniques.	1. resolve a VPN misconfiguration problem using the command line interface show and debug commands.

G. SPECIAL INFORMATION:

This course may require use of the Internet, the submission of electronically prepared documents and the use of a course management software program. Students who have a disability and need accommodations should contact Accessibility Services at the beginning of the semester. This information will be made available in alternative format, such as Braille, large print, or current media, upon request.

H. COURSE CODING INFORMATION:

Course Code T/Class Maximum 30; Letter Grade

Revision date: 12/08/10; 11/05/24

AASC Approval date: 12/21/10; 11/19/24

*These five MnTC Goals have been identified as Riverland Community College Core Themes. Every course in the Riverland Community College curriculum shall meet outcomes from one of these themes.

**These five MnTC Goals have been identified as Riverland Community College Disciplines. Riverland’s MnTC courses also shall meet outcomes from a Discipline Area.

NOTE: The Minnesota Transfer Curriculum “10 Goal Areas of Emphasis” are reflected in the five required discipline areas and five core themes noted in the Riverland Community College program of study guide and/or college catalog.

*Riverland Community College Core Themes	MnTC Goal Number
Critical Thinking (CT)	2
Human Diversity (HD)	7A, 7B, 7A/B
Global Perspective (GP)	8
Ethical and Civic Responsibility (EC)	9
People and the Environment (PE)	10

**Riverland Community College Discipline Areas	MnTC Goal Number
Communication (CM)	1
Natural Sciences (NS)	3
Mathematics/Logical Reasoning (MA)	4
History and the Social & Behavioral Sciences (SS)	5
Humanities and Fine Arts (HU)	6