DEPT: Computer Support Technology        COURSE NO: CST 2160
NUMBER OF CREDITS: 3
COURSE TITLE: Wide Area Network Technology

CATALOG DESCRIPTION:
Develops knowledge and skills in the areas of advanced IP addressing techniques, WAN technology and
terminology, Frame Relay, network management, and introduction to optical networking. Students will apply
knowledge from previous networking courses and to be able to explain how and why a particular strategy is
employed. In addition, the student will prepare for taking the CCNA Exam. Wide Area Network
Technologies is the last of four courses leading to the Cisco Certified Network Associate (CCNA)
designation. The course consists of web-based interactive lessons and hands-on labs. This course will be the
final course in the Cisco Network certificate. Prerequisite: CST 2150

AUDIENCE:
Computer Support Technology students, Networking Specialist students and anyone interested in learning
about Cisco router configuration.

FULFILLS MN TRANSFER CURRICULUM AREA(S): (Do not apply.)

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE:
CST 2150 Advanced Routing

LENGTH OF COURSE: 2 lecture hours and 2 lab hours per week for 16 weeks.

THIS COURSE IS USUALLY OFFERED:
Every other year ☐  Fall ☐  Spring X  Summer ☐  undetermined ☐

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: The student will achieve an entry level of knowledge and skill needed for
computer support personnel.

2) THINKING SKILLS: The student will develop logical thinking skills by mastering the networking
curriculum.

3) COMMUNICATIONS SKILLS: The student will demonstrate appropriate communication
techniques by completing an engineering journal, interviewing network clients, and documenting router
configuration.

4) HUMAN DIVERSITY: The student will gain self-awareness regarding their feelings towards people
of different cultures, educational backgrounds, value systems and socioeconomic status.
TOPICS TO BE COVERED: Using routers, setting up and starting routers, configuring routers, examining router operating system files, using routed and routing protocols.

LIST OF EXPECTED COURSE OUTCOMES:
1. demonstrate a working knowledge of WAN vocabulary
2. identify WAN encapsulation formats
3. identify WAN link options
4. identify WAN design requirements
5. identify and select network capabilities
6. explain T1 leased lines, Frame Relay, ISDN, and PPP
7. explain the 4-phase PPP session process
8. understand ISDN technology
9. add ISDN to router configuration
10. understand Frame Relay technology
11. add Frame Relay to router configuration
12. describe WAN-related network management tasks
13. maintain engineering journal
14. review for certification test

LEARNING/TEACHING TECHNIQUES used in the course are:
X Collaborative Learning  X Problem Solving
☐ Student Presentations  ☐ Interactive Lectures
☐ Creative Projects  ☐ Individual Coaching
X Lecture  X Films/Videos/Slides
X Demonstrations  ☐ Other (describe below)
X Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:
X Reading  X Tests  X Individual Projects
☐ Oral Presentations  X Worksheets  X Collaborative Projects
X Textbook Problems  ☐ Papers  ☐ Portfolio
☐ Group Problems  ☐ Term Paper
X Other (describe below)
  Practical Tests

The information in this course outline is subject to revision

Veteran Services: Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or Minnesota Relay Service at 800-627-3529 or by using your preferred relay service.