MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

Faculty is required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT. CST COURSE NUMBER: 1420
NUMBER OF CREDITS: 2 lecture 1 lab for a total of 3 credits

COURSE TITLE: Convergence Technology

CATALOG DESCRIPTION:
A study of telecommunications convergent technologies including telephone, LAN, WAN, wireless, voice, video, and internet protocol. Introduces the student to Voice, Video and Integrated data (VVID) over IP networks to provide seamless and secure communications solutions to business and home technology needs. This includes discussions on interoperability methods and techniques to integrate disparate systems and technologies, and includes people skills development. This course includes the fundamental concepts of digital media distribution, Digital Video Distribution in Broadband, Television, Mobile and Converged Networks.

AUDIENCE: Telecommunications Technology Students, Computer Support Technology students, Networking Specialist students and anyone interested in learning about the telecommunications industry.

FULFILLS MN TRANSFER CURRICULUM AREA(S) - Does not apply

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE
CST 1180 Introduction to Networking

LENGTH OF COURSE: 2 lecture hours and 1 lab hour per week for 16 weeks

THIS COURSE IS USUALLY OFFERED:
Every other year fall spring X summer blank undetermined blank

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

1) ACADEMIC CONTENT: The academic objectives of this course are:
   a. The student will achieve an entry level of knowledge and skill needed for telecommunications personnel

2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
   a. The student will develop logical thinking skills by mastering the telecommunications curriculum.

3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
4) HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:
   a. 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:
1. Technology trends
2. Video compression, encoding and transport in open and closed networks
3. Digital rights management
4. Network Architecture
5. Quality of Service
6. Secure network services

LIST OF EXPECTED COURSE OUTCOMES:
1. Identify industry standards and Protocols for converged networks
2. Define convergence
3. Troubleshoot converged networks
4. Use a digital multimeter, a tone and probe kit, a lineman's test handset and other tools that allow you to wire analog and digital lines
5. Describe Multimedia Architecture
6. Identify networking models and topologies
7. Learn the vendor-independent networking skills and concepts required for entry-level professionals seeking employment in the Information Technology (IT) or telecommunications industries.
8. Identify the characteristics of circuit-based and packet switched technologies,
9. Identify differences between the call flow in convergence-based calls and the call flow in circuit-based calls
10. Identify the types of signaling protocols for converged networks.
11. Compare and contrast the three major signaling protocols for VoIP.
12. Determine whether an existing network is capable of supporting convergent services
13. Identify the specific elements required for a successful VoIP implementation.
14. Describe codecs and their bandwidth requirements,
15. Describe the impact of compressing voice in a network.
16. Identify the features unified messaging.
17. Identify methods for providing video services through a converged solution.
18. Define delay, latency, jitter and wander, and identify their impact on real-time communications

LEARNING/TEACHING TECHNIQUES used in the course are:
X Collaborative Learning  X Problem Solving  Student
Presentations

☐ Interactive Lecture  ☑ Creative Projects  ☐ Individual Coaching
☑ Lecture  ☑ Films/Videos/Slides
☑ Demonstrations  ☐ Other (describe below)  ☐ Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:

☑ Reading  ☑ Tests  ☑ Individually Project
☑ Oral Presentations  ☑ Worksheets  ☑ Collaborative Projects
☐ Textbook Problems  ☐ Papers  ☐ Portfolio
☑ Group Problems  ☐ Term Paper
☐ Other (describe below)

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.

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