COURSE OUTLINE

Section 1:

Course Title: Network Analysis and Design

Course Code: CNET-2201

Course Description: The analysis and design of enterprise-level computer networks, network storage, and disaster recovery. Students are also introduced to the design of data centers.

Grade Scheme: ☐ Pass/Fail ☒ Percentage Minimum Pass Mark: 60%

Course Value: Outcome hours OR 3 Credit(s) 60 (30 class + 30 lab) Hours

Pre-requisites: CMPH-1000 A+ Hardware
CMPS-1000 A+ Software

Co-requisites: CNET-2001 Cisco CCNA III: Scaling Networks
CNET-2110 Active Directory Infrastructure

Section 2:

Learning Outcomes and Competencies

1. **Investigate the use of network storage devices to optimize cost and performance.**
   - 1.1 Describe the advantages to an organization in using network storage technologies.
   - 1.2 Compare and contrast Network Attached Storage (NAS) and Storage Area Networks (SAN).
   - 1.3 Compare and contrast Fiber Channel, Fiber Channel over Ethernet, and iSCSI for network storage connectivity.
   - 1.4 Describe the benefits of shared network storage in virtualized environments.
   - 1.5 Describe tiered storage and data categorization.
   - 1.6 Chose network storage solutions to meet business requirements.
   - 1.7 Implement shared network storage in a virtualized environment.
2. **Analyze network design to optimize performance.**
   - 2.1 Determine network bandwidth and transmission times required to transfer multimedia files.

2.2 Make baseline measurements of network traffic.

2.3 Develop a traffic specification document.

2.4 Calculate storage requirements for various file types including multimedia files.

2.5 Compare and contrast lossless to lossy file compression techniques.

2.6 Explain codecs and their use for audio and video.

2.7 Determine appropriate compression techniques to reduce storage and transmission requirements while maintaining acceptable quality.

2.8 Document the logical design of a network.

2.9 Document the physical design of a network.

2.10 Describe how storage solutions affect network design.

3. Implement disaster recovery to minimize service downtime.

3.1 Describe the various types of backup options.

3.2 Develop a backup and recovery strategy including safe storage of backups.

3.3 Create images of system hard drives using software tools.

3.4 Identify redundancy and fault tolerance methods for hardware components.

3.5 Consider virtualization in disaster recovery planning.

3.6 Develop a disaster recovery plan for small businesses.

3.7 Identify recovery team members including co-coordinator and alternates.

3.8 Identify physical, security, environmental, internal, and external risks.

3.9 Analyze the need to use alternate sites and off-site storage.

3.10 Develop incident response procedures.

Section 3:

Assessment Categories:	Projects and Assignments	60%
	Tests and exams	30%
	Professionalism	10%

Research Component? ☐ Yes ☒ No

Section 4:

(For administrative use only)

Is this course new? ☒ Yes ☐ No

Is this course replacing an existing course(s)? ☒ Yes ☐ No

If this course is replacing another, please record the name and code of the old course:
CNET-2200 Network Analysis and Design

Course equivalents:

Note: See Quality Procedure A01 for more details.

Catalog Year of Original Course Implementation: 2014

Catalog Year of Current Version Implementation: 2015

Revision level: 3 **Version:** 3 **Date:** June/2016 **Authorized by:** MLGJ

Accreditation and or Supporting Documents:	National Technology Benchmarks: Canadian Council of Technicians & Technologists; Discipline: Information Technology; Level: Technologist
Additional Information:	None
Subject matter expert(s):	Chris Arsenault

Approved by: (Program Manager)

Paul Murnaghan Date Approved: **2016-06-30**

Approved by: (Curriculum Consultant)

Mary Lou Griffin-Jenkins Date Approved: **2016-06-30**