NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE

COURSE SYLLABUS

Course Title: Networking I   **Course #:** CST* 180

Course Description: 4 Credits.   An introduction to computer networking concepts. Topics include the functions of the ISO/OSI reference model; data link and network addresses; the function of the MAC address; data encapsulation; the different classes of IP addresses (and subnetting); the functions of the TCP/IP network-layer protocols. The student learns to plan, design and install an Ethernet LAN using an extended or hierarchical star topology; to select, install, and test cable and determine wiring closet locations; to perform beginning network maintenance, tuning, and troubleshooting along with basic documenting, auditing, and monitoring of LANs. The course will prepare students for testing in Network+ certification.

Pre-requisite/Co-requisite: Eligible for ENG 101

Goals: Students are expected to

- Become familiar with layered communication architectures (OSI and TCP/IP).
- Understand the client/server model and key application layer protocols
- Understand the concepts of reliable data transfer and how TCP implements these concepts.
- Learn the principles of routing and the semantics and syntax of IP.
- Understand the basics of error detection including parity, checksums, and CRC.

Outcomes: Upon successful completion of this course students will be able to:

- explain how digital messages are transported across physical network media, including copper cables, fiber-optics, and radio waves.
- explain how modern telecommunications is being transformed from an analog communication system designed for voice and video to a digital communication system supporting a broad range of information services
- demonstrate an understanding of the uses of computer networks
- demonstrate an understanding of major components of computer networks, based upon the ISO/OSI Reference Model
- demonstrate an understanding of the uses of network hardware, including the use of hubs, switches, and routers.
- demonstrate an understanding of each layer of the ISO/OSI Reference Model, including physical, datalink, network and application protocols
- demonstrate an understanding of computer network security issues.