Department:

Computer Support Technology

Course Description:

This course is designed to provide comprehensive instruction on how to design and implement Local and Wide Area Networks, including the equipment and technologies used in LANs and WANs. The course covers the features and functions of these devices, their implementation, cabling standards, and design parameters for various types of media and topologies. Students will be introduced to wireless technologies as well as a variety of high-speed Internet access options. The course will also cover challenges involved in creating a network design that meets the needs of users. There will be hands-on projects and case projects to provide experience with tools involved in network design and implementation.

Course Competencies:

Upon completion of the course, the student should be able to:

1. Describe data transmission between LAN and WAN
2. Identify and explain the seven layers of the OSI model
3. Identify and explain network topologies (Bus, Ring, Star, etc.)
4. Identify the hardware used in various types of networks
5. Install and configure network hardware
6. Identify and assemble various communication media and cable connectors (BNC, RJ-45, ST, SC, etc.)
7. Describe the purpose of using LAN and WAN protocols for network communication

Course Content:

A. LAN/WAN Networking: An Overview
B. LAN/WAN Interconnectivity
C. Physical Transmission Options
D. Network Transmission Options
E. LAN and WAN Protocols
F. TCP/IP Past, Present, and Future
G. WAN Transport Methods
H. ATM Technologies
I. Wireless Technologies
J. Integrating Voice, Video, and Data
K. LAN and WAN Design: Putting It All Together
L. Network Equipment Vendors
M. List of Acronyms
Learning Assessments:

Competencies will be assessed by assignments, case problems, quizzes, chapter tests, hands-on projects, lab assignments, a midterm test, and a final test. The tests may be in the objective or problem solving format.

Instructional Materials:

A Guide to Designing and Implanting Local and Wide Area Networks, 2nd Ed., Course Technology
ISBN: 9780619121228

Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

On-Campus Students: At enrollment, any on campus student may complete a form that will allow them to self-identify any disability.

Off-Campus Regional Students: Self-identify your disability and accommodation needs with the Regional Coordinator and/or instructor, preferably prior to the first class meeting.

Online Students: Self-identify your disability and accommodation needs by contacting the Disabilities Coordinator. Students must provide their own programs to allow accessibility on their home computer.

Any student may also identify their disability by completing an online form located on the HCC homepage under Students Services/Resources/Disabilities. Questions should be directed to the Disabilities Coordinator.