IT A191: NETWORK AND COMMUNICATIONS TECHNOLOGIES

Item	Value
Curriculum Committee Approval Date	12/02/2020
Top Code	070800 - Computer Infrastructure and Support
Units	4 Total Units
Hours	72 Total Hours (Lecture Hours 72)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

Provides an introduction to an overview of the field of networking, data communications and connectivity, with an emphasis on terminology, hardware, and software associated with the various components of a network. Provide preparation for students seeking the Network + Certification. Enrollment Limitation: CHT A191; students who complete IT A191 may not enroll in or receive credit for CHT A191. ADVISORY: IT A110 or CIS A110. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Build a small network infrastructure by assembling cables, patch-panels and wall connectors into a complete environment.
2. Install and configure a simple network using a combination of computer workstations and switches and incorporating file and printer sharing.

Course Objectives

- 1. Identify the hardware components of a network.
- 2. Identify the software components of a network.
- 3. Explain the operations and interactions of the network components.
- 4. Analyze and configure servers and clients for different network scenarios.
- 5. Analyze and diagnose network performance and operational conditions.
- 6. Recognize and implement network-monitoring processes.
- 7. Recognize and implement diagnostic processes.
- 8. Configure a network by establishing baselines for operations, including: a. Creating users and groups b. Applying file and resource permissions c. Designing the basic infrastructure
- 9. Recognize and apply appropriate security procedures
- 10. Compare and contrast different methods of network administrator to user interactions.

Lecture Content

Basic networking knowledge The 7-layer OSI Model Network hardware Modems Network interface cards (NICs) CSU/DSUs Network connectivity hardware Bridges   Switches Routers Networking software Network operating systems Windows-based NOSs Netware-based NOSs Linux/Unix-based NOSs Desktop networking clients   Physical Layer Protocols Physical topologies Analog and digital signaling Bandwidth use Multiplexing Connection methods. Data link layer protocols Ethernet. Token ring WiFi (IEEE 802.11) Network layer protocols IP IPX NetBEUI Transport layer protocols TCP and UDP Upper Layer Protocols Session Connection establishment, maintenance and disconnection Presentation Encryption Translation Application File services Print services Application Message Database The TCP/IP protocols Fundamentals Routing Applications Configuration Remote network access Dial-up Remote control VPNs Network security Port monitoring and blocking Virus Protection User Access Planning and installing the network Cable and infrastructure Setting up users and groups Setting up shared printers Network management and maintenance Troubleshooting >

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)

Instructional Techniques

1. Lecture and application of ideas 2. Use of computers to demonstrate processes and methods 3. Homework assignments 4. Group discussions

Reading Assignments

Minimum of 4 hours per week (72 hours) reading from textbook material.

Writing Assignments

Student performance on exams including essays, quizzes and homework assignments will be used to determine proficiency. This course will have many in-class demonstrations and a very limited amount of hands-on student proficiency. Minimum of 4 hours per week crating and editing class and software projects.

Out-of-class Assignments

72 hours (4hrs/wk). Student performance on quizzes, tests, including short essays, and laboratory assignments will be used to determine proficiency

Demonstration of Critical Thinking

Reading and writing assignments Web-based research Term and/or other papers Problem solving demonstrations Exams Homework problems Objective examinations, including: Multiple Choice True/False Completion

Required Writing, Problem Solving, Skills Demonstration

Student performance on exams including essays, quizzes and homework assignments will be used to determine proficiency. This course will have many in-class demonstrations and a very limited amount of hands-on student proficiency.

Eligible Disciplines

Computer information systems (computer network installation, microcomputer ...: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience. Computer service technology: Any bachelors degree and two

years of professional experience, or any associate degree and six years of professional experience. Computer service technology: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Meyers, Michael. MComTIA Network+ Guide To Managing and Troubleshooting Networks, 4 ed. Burr Ridge: McGraw-Hill, 2015 Rationale: -