

CIT 106. ROUTING AND SWITCHING ESSENTIALS (Cisco #2).

Credit Hours: 4

Scheduled hours per week

Lecture: 2

Lab: 2

Other: 0

Catalog Course Description: The second in a series of four courses required to prepare the student for the Cisco CCNA certification. Topics covered in this semester include routing, switching, VLANs, ACLs, DHCP, NAT, and troubleshooting.

Pre-requisites: Grade of “C” or better in CIT 105

Co-requisites: N/A

Course Learning Outcomes:

- Describe and discuss basic switching concepts and configuration tasks
- Demonstrate ability to configure and manage VLANs and Inter-VLAN routing
- Describe and discuss basic routing concepts and configuration tasks
- Discuss and demonstrate ability to configure both static and dynamic routing protocols
- Demonstrate ability to configure, manage, and troubleshoot single-area OSPF
- Discuss and demonstrate ability to create and configure access control lists
- Discuss and demonstrate ability to configure and maintain DHCP and NAT

Topics to be studied:

- Switched networks
- VLANs
- Routing concepts
- Inter-VLAN routing
- Static and dynamic routing
- Single-area OSPF
- Access Control Lists
- DHCP
- Network Address Translation for IPv4

Relationship of Course to Program or Discipline Learning Outcomes:

| | |
|---|--|
| X | Identify and describe layers of the OSI and TCP/IP models, and use them effectively in troubleshooting |
| X | Describe and apply LAN and WAN technologies in wired and wireless environments |
| | Demonstrate ability to apply workstation and server installation, configuration, management and troubleshooting techniques |
| X | Demonstrate ability to install, configure, manage, and maintain routing and switching technologies |
| | Describe and discuss different operating systems and their relationship with hardware, their functions, advantages and disadvantages, and their respective tools and software packages |
| X | Explain Information Systems and choose appropriate systems based on requirements |
| X | Describe basic information security and computer ethics |

| | |
|---|---|
| Relationship of Course to General Education Learning Outcomes: | |
| Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements. | X |
| Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions. | X |
| Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts. | X |
| Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication. | |
| Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills. | X |
| The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art. | |
| 5/3/2016 | |

Special requirements of the course:

Students will be required to setup and configure a network utilizing devices, protocols, and other topics studied during the semester and in prior networking courses.

Additional information:

This course requires a C or better to enroll into CIT 205 (the next Cisco curriculum).

Prepared by: Doug Rhodes

Date: 10/20/2017