

**CIT 205. SCALING NETWORKS (Cisco #3).**

**Credit Hours:** 4

**Scheduled hours per week**

Lecture: 2

Lab: 2

Other: 0

**Catalog Course Description:** The third of four courses to prepare the student for the Cisco CCNA certification. Topics covered in this course: enhanced switching technologies, redundancy protocols, wireless networking, complex routing protocols, and managing Cisco IOS software.

**Pre-requisites:** Grade of “C” or better in CIT 106

**Co-requisites:** N/A

**Course Learning Outcomes:**

- Describe and discuss access, distribution, and core layers of a hierarchical network
- Describe and demonstrate ability to configure and manage spanning-tree protocol
- Describe and discuss first hop redundancy protocols such as HSRP and GLBP
- Describe and demonstrate ability to configure and manage EtherChannel
- Describe and discuss different 802.11 wireless technologies
- Demonstrate ability to configure wireless access points and clients
- Describe and demonstrate ability to configure single-area and multi-area OSPF
- Describe and demonstrate ability to configure EIGRP
- Describe and discuss Cisco IOS licensing and file management

**Topics to be studied:**

- Hierarchical network design
- Selecting network devices
- Spanning Tree Protocol
- First Hop Redundancy Protocols
- Link aggregation
- Wireless LANs
- Single-area and Multi-area OSPF
- EIGRP
- IOS Images and Licensing

**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

<b>Relationship of Course to General Education Learning Outcomes:</b>	
<b>Composition and Rhetoric</b> 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
<b>Science &amp; Technology</b> 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
<b>Mathematics &amp; Quantitative Skills</b> Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X
<b>Society, Diversity, &amp; Connections</b> Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
<b>Human Inquiry &amp; the Past</b> Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	X
<b>The Arts &amp; Creativity</b> Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
<b>5/3/2016</b>	

**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 206 (the next Cisco curriculum).

**Prepared by:** Doug Rhodes

**Date:** 10/20/2017