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:

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

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<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Indicator</th>
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<tr>
<td>Composition and Rhetoric</td>
<td>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.</td>
<td>X</td>
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<tr>
<td>Science &amp; Technology</td>
<td>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.</td>
<td>X</td>
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<tr>
<td>Mathematics &amp; Quantitative Skills</td>
<td>Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.</td>
<td>X</td>
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<td>Society, Diversity, &amp; Connections</td>
<td>Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.</td>
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<tr>
<td>Human Inquiry &amp; the Past</td>
<td>Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.</td>
<td>X</td>
</tr>
<tr>
<td>The Arts &amp; Creativity</td>
<td>Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.</td>
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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 206 (the next Cisco curriculum).

**Prepared by:** Doug Rhodes

**Date:** 10/20/2017