CIT 206. CONNECTING NETWORKS (Cisco #4).
Credit Hours: 4
Scheduled hours per week
- Lecture: 2
- Lab: 2
- Other: 2

Catalog Course Description: The last in a series of four courses required to prepare the student for the Cisco CCNA certification. Topics covered in this semester include wide-area network (WAN) technologies and network services for converged applications, data link protocols, and virtual private network (VPN) technologies.

Pre-requisites: Grade of “C” or better in CIT 205

Co-requisites: N/A

Course Learning Outcomes:
- Describe and discuss Cisco Enterprise Architecture design choices
- Describe and discuss WAN technologies
- Describe and demonstrate ability to configure and manage PPP and Frame Relay connections
- Describe and demonstrate ability to configure and manage Network Address Translation (NAT) for IPv4
- Describe and discuss broadband solutions
- Describe and demonstrate ability to configure PPP over Ethernet (PPPoE)
- Describe and discuss VPN technologies
- Demonstrate ability to configure and manage GRE VPN tunnels
- Describe and demonstrate ability to use systematic approaches to troubleshooting networks

Topics to be studied:
- Cisco Enterprise Architecture
- WAN Technologies
- Point-to-Point Protocol (PPP)
- Frame Relay
- Network Address Translation (NAT) for IPv4
- PPP over Ethernet (PPPoE)
- Virtual Private Network (VPN) Technologies
- Simple Network Management Protocol (SNMP) and Netflow
- Troubleshooting with a systematic approach

Relationship of Course to Program or Discipline Learning Outcomes:

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<th>Identify and describe layers of the OSI and TCP/IP models, and use them effectively in troubleshooting</th>
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<td>X</td>
<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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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

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<th>Relationship of Course to General Education Learning Outcomes:</th>
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<td><strong>Composition and Rhetoric</strong> 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>
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<td><strong>Science &amp; Technology</strong> 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>
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<td><strong>Mathematics &amp; Quantitative Skills</strong> Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.</td>
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<td><strong>Society, Diversity, &amp; Connections</strong> Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.</td>
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<td><strong>Human Inquiry &amp; the Past</strong> Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.</td>
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<td><strong>The Arts &amp; Creativity</strong> 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 305 (the next Cisco curriculum).

**Prepared by:** Doug Rhodes

**Date:** 10/20/2017