CIT 305. ADVANCED ROUTING (Cisco #5).
Credit Hours: 5

Scheduled hours per week
- Lecture: 4
- Lab: 2
- Other: 0

Catalog Course Description: This course is the first in a series of four required to prepare the student for a career in networking and the Cisco CCNP certification. Topics covered include scalable networks, advanced IP addressing management, advanced routing, OSPF, multi-area OSPF, EIGRP, route optimization, BGP, scaling BGP, and security.

Pre-requisites: Grade of “C” or better in CIT 206

Co-requisites: N/A

Course Learning Outcomes:
- Network and Routing Concepts
- Implementing EIGRP
- Implementing OSPF
- Routing Update Manipulation
- Path Control
- Enterprise Internet Connectivity
- Implementing BGP
- Routers and Routing Protocols Hardening

Topics to be studied:
- Describe and discuss scalable internetworks
- Describe and discuss managing traffic and access
- Explain how to managing IP traffic
- Implement and explain queuing to manage traffic
- Demonstrate an understanding of differing routing protocols
- Demonstrate an ability to extend IP addressing using VLSM
- Implement and configure OSPF
- Implement and configure EIGRP
- Describe and discuss optimization of routing updates and their operation
- Implement and configure BGP

Relationship of Course to Program or Discipline Learning Outcomes:

| Ability to understand, plan, and execute good Project Management |
| Ability to recognize and apply industry recognized code of ethics to various situations |
| Ability to understand and apply Information Security concepts and best practices |
| X Ability to plan, implement, and troubleshoot Advanced Routing and Switching technologies |
| Ability to plan, implement, and troubleshoot Advanced Systems Administration technologies |
| Ability to plan, implement, and troubleshoot Advanced Security Systems |

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<th>Relationship of Course to General Education Learning Outcomes:</th>
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<tr>
<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:**

N/A

**Additional information:**

N/A

**Prepared by:** Doug Rhodes

**Date:** 10/20/2017