

Prepared by the Department of Business

Date of Departmental Approval: January 29, 2018

Date approved by Curriculum and Programs: March 7, 2018

Effective: Fall 2018

1. **Course Number:** BIT249 / BIT249L
Course Title: Scaling Networks (Cisco 3)
2. **Description:** This course provides hands-on advanced networking knowledge through simulations and laboratories, emphasizing the architecture, components, and operations of routers and switches used in small to medium sized networks. IPv4 and IPv6 networks using various routing protocols, switches, and configurations are covered. This is the first of two courses necessary for the Interconnecting Cisco Networking Devices Part 2 (ICND2) and the third of four courses for the Cisco Certified Network Associate (CCNA) exam. (3 class hours/ 2 laboratory hours)
3. **Student Learning Outcomes (instructional objectives, intellectual skills):**
Upon successful completion of this course, students are able to do the following
 - Critique, configure and troubleshoot enhanced switching technologies such as VLANs, Rapid Spanning Tree Protocol (RSTP), Per VLAN Spanning Tree Plus Protocol (PVST+) and EtherChannel.
 - Plan, configure and troubleshoot first hop redundancy protocols (HSRP) in a switched network
 - Compare, configure and troubleshoot the Dynamic Trunking Protocols (DTP) and VLAN Trunking Protocols
 - Configure and troubleshoot switch stacking
 - Experiment with , configure and troubleshoot extended VLANs
 - Identify, configure and troubleshoot wireless routers and clients
 - Display proficiency configuring and troubleshooting routers in a complex routed Ipv4 and Ipv6 network using single-area OSPF, multi-area OSPF, and Enhanced Interior Gateway Routing Protocol (EIGRP) for small to medium sized networks compliant with the Cisco Academy hands on requirements.
 - Manage Cisco IOS Software licensing and configuration files
 - Write documentation responding to multiple network routing situations, questions and issues.
4. **Credits:** 4 credits
5. **Satisfies General Education Requirement:** No
6. **Co-requisite:** BIT248 (Routing & Switching Essentials (Cisco 2))
7. **Semester(s) Offered:** Varies
8. **Suggested General Guidelines for Evaluation:** hands on labs, simulated labs, homework, quizzes, final
9. **Content Outline of Course:** (Optional)