COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

Prepared by: Bill Branch, Dave Bowman — October, 03, 2001
Reviewed by: Bill Branch, Dave Bowman — Fall 2009
Revised by: Dave Bowman — Spring 2012
Revised by: Bill Branch — December 20, 2016
Effective Term: Fall 2017

A. Identification:
   1. Subject Area: Computer Information Systems (CIS)
   2. Course Number: 160
   3. Course Title: Cisco Networking Academy Semester 3
   4. Credit Hours: 4
   5. Course Description: This is the third of a four semester curriculum series designed to provide students with classroom discussions, hands-on experience and virtual network simulations in current and emerging networking technologies to enter employment and/or further education in the networking field. This course describes operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement a Link aggregation, LAN redundancy and WLAN in a small-to-medium network. Prior networking knowledge strongly recommended. Prerequisite: CIS 150 or Consent of Instructor. Four lecture.

B. Course Goals: Provide students with the knowledge and hands-on skills to select and apply an appropriate routing protocol, design and build scalable LAN/WLAN infrastructures and manage IOS licensing

C. Course Outcomes:
   Upon successful completion of this course, students will:
   1. configure and troubleshoot enhanced switching technologies such as VLANs, Rapid Spanning Tree Protocol (RSTP), Per VLAN Spanning Tree Plus Protocol (PVST+), and EtherChannel;
   2. configure, and troubleshoot first hop redundancy protocols (HSRP) in a switched network;
   3. configure, and troubleshoot wireless routers and wireless clients;
   4. configure and troubleshoot routers in a complex routed IPv4 or IPv6 network using single-area OSPF, multi-area OSPF, and Enhanced Interior Gateway Routing Protocol (EIGRP);
   5. and manage Cisco IOS Software licensing and configuration files.

D. Course Outcomes Assessment will include:
   1. self-assessment chapter quizzes;
   2. web based chapter exams;
   3. hands-on lab assessment for each applicable chapter;
   4. web final exam covering material from the entire semester;
   5. and final practical Exam (using routers and switches).

E. Course Content will include:
   1. LAN Redundancy;
   2. Link Aggregation;
   3. Wireless LANs;
   4. Adjust and Troubleshoot Single-Area OSPF;

5. Multi-area OSPF;
6. EIGRP;
7. EIGRP Advanced Configurations and Troubleshooting;
8. and IOS Images and Licensing.