Big Bend
COMMUNITY COLLEGE

MASTER COURSE OUTLINE

Prepared By: Mary Shannon   Date: April 2014

COURSE TITLE
Cisco Networking: Routing & Switching Essentials

GENERAL COURSE INFORMATION

Dept.: CS	Course Num: 157	(Formerly:)
CIP Code: 11.0901	Intent Code: 21	Program Code: 527
Credits: 5		
Total Contact Hrs Per Qtr.: 77		
Lecture Hrs: 33	Lab Hrs: 44	Other Hrs:

Distribution Designation: General Elective (GE)

COURSE DESCRIPTION (as it will appear in the catalog)
Describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. This is the second of two courses comprising the Cisco CCENT certification and covers the technical knowledge and skills required to take the Cisco ICND1 exam.

PREREQUISITES
CS 156

TEXTBOOK GUIDELINES
Textbook and materials to be determined by CS Faculty (Example: *Cisco Packet Tracer current version*)

COURSE LEARNING OUTCOMES
Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:
1.   Describe enhanced switching technologies such as VLANs, VLAN Trunking Protocol, Rapid Spanning Tree Protocol, and 802.1q
2.   Describe basic switching concepts and the operation of Cisco switches
3.   Configure and troubleshoot basic operations of a small switched network
4.   Configure and troubleshoot basic operations of routers in a small routed network
5.   Configure and troubleshoot basic operations of routers in a small routed network
6.   Configure and troubleshoot VLANs and inter-VLAN routing
7.   Describe the operations of Dynamic Host Configuration Protocol and Domain Name System for IPv4 and IPv6

INSTITUTIONAL OUTCOMES

COURSE CONTENT OUTLINE
1. LAN Switching
2. Routing Between Networks
3. Enabling Static Routing
4. Implementing VLANs

5. Inter-VLAN Communication
6. Implementing Dynamic Routing
7. Access Control Lists
8. IP Services

DEPARTMENTAL GUIDELINES *(optional)*
This is the second course in the newly revised Cisco Networking Academy CCNA Routing and Switching curriculum. Students will be prepared to take the Cisco CCENT® certification exam after completing CS 156 and CS 157 and the CCNA® Routing and Switching certification exam after completing CS 158 and CS 159.

_____   _____

DIVISION CHAIR APPROVAL   **DATE**