

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

 X Transfer Course X A.A. Degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: CSIS 131: Cisco Router Configuration

UNIT VALUE: 2

MINIMUM NUMBER OF SEMESTER HOURS: 70

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: CSIS 130: Cisco Networking Fundamentals

COREQUISITE: none

RECOMMENDED PREPARATION: none

SCOPE OF COURSE:

Development of knowledge and skills to install, configure, customize, maintain and troubleshoot Cisco routers and components. This 70 hour course of instruction prepares the student for the Cisco certification examination.

SPECIFIC COURSE OBJECTIVES:

The successful student will be able to:

1. Explain networking and the networking manager's role.
2. Explain the OSI Model Standards and the function of the seven layers.
3. Design a LAN using appropriate technologies and media types.
4. Design a multi-protocol Cisco routed WAN.
5. Identify the commands necessary to install, configure and maintain Cisco routers including software revision, interface type, addressing, configuration registers and status.
6. Configure and install a five Cisco router switched network and verify correct configuration and performance, including IP addressing and subnet masking for each LAN connected to the network.
7. Troubleshoot WAN configuration, subnet masking, IP addressing, EMI and RFI problems.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Networking Concepts
 - A. Terminology
 - B. Reasons for networking
 - C. Network manager's role

- II. OSI Model
 - A. Standards
 - B. Seven layers
 - C. Communication between layers
 - D. Devices which operate at each layer

- III. LAN Technologies
 - A. Design and architecture
 - B. Ethernet standards, frames, reliability, options
 - C. Token ring topologies
 - D. Fiber distributed data interface
 - E. WAN standards
 - F. Causes of and solutions for EMI and RFI problems

- IV. Routing Protocols
 - A. Static, dynamic routes
 - B. Multi-protocol routing
 - C. Router table updates
 - D. Cisco IOS software
 - E. Cisco router commands
 - F. Addressing schemes
 - G. Dynamic routing-link state
 - H. Transmission code protocol
 - I. LAN to LAN, LAN to WAN
 - J. TCP/IP network layer addressing
 - K. Time to convergence
 - L. Media types
 - M. User interfaces
 - N. System setup

- V. Router Configuration Files
 - A. Configuration methods
 - B. Configuring from TFTP server
 - C. Server control

- VI. Cisco Troubleshooting Procedures
 - A. Network testing
 - B. LAN to LAN routing
 - C. EMI and RFI problems
 - D. Testing data link/physical layers
 - E. Subnet planning

REQUIRED READING:

Vito Amato. Cisco Networking Academy Program: First Year Companion Guide. Boston: Cisco Press, 2001.

SUGGESTED READING:

None

REQUIRED WRITING:

Students are regularly required to do problem solving exercises that demonstrate that they have acquired the skills taught in the exercise. The skills demonstrated in these exercises include the ability to explain networking solutions, internetworking problems, and address resolution protocols. The students are required to complete a minimum of one page of writing per homework assignment.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.

There are written homework exercises within each section of each chapter that are assigned, requiring an average of one hour to complete. In addition, numerous computer lab exercises are assigned, each ranging from one to ten hours to complete by the average student.

INSTRUCTIONAL METHODOLOGY:**Check all that apply:**

- lecture
- laboratory
- lecture-laboratory combination
- directed study

DISTANCE LEARNING:

This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply:

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

The student's grade for this course will consist of lab projects, online tests, an online final, the completion of an engineering journal, completion of the required lab manual exercises, and class participation. Grades will be calculated on the basis of points earned by the student. An example of how points will be earned in this class follows:

Online Tests	100 points
Final Exam	50 points
Engineering Journal	100 points
Lab Manual	100 points
Participation	50 points
	400 points total

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes ___ No X Number of times course may be taken for credit: 1

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

CONTACT PERSON: Anthony Smith, x2630

SIGNATURES ON FILE