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 130 Cisco Networking Fundamentals

UNIT VALUE: 2

MINIMUM NUMBER OF SEMESTER HOURS: 70

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: None

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:
Emphasis on the OSI model and industry standards. Includes network topologies, IP addressing, subnet masks, basic network design and cable installation. 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 advantages and standards.
2. Explain internetworking problems and solutions and their relationship to the seven layers of the OSI Model.
3. Use the binary numbering system to calculate IP addresses and subnet mask.
4. Demonstrate the interaction of a MAC address and an IP address.
5. Demonstrate an understanding of how Cisco routers discover networks.
6. Explain address resolution protocols.
7. Design and install a local area network, using industry standards (IEEE, EIA/TIA, UL).
8. Troubleshoot LAN installation and operational problems.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

I. Networking Concepts
   A. Terminology
   B. Advantages of networking
   C. Network standards
II. OSI Model
   A. Seven layers
   B. Essentials to communicate on a network
   C. Internetworking problems and solutions
   D. Bridges as solutions
   E. Advantages of routing
III. Binary Numbering System
   A. Binary math and logic
   B. IP addresses and routing tables
   C. Subnet mask
IV. Network Architecture
   A. MAC addressing
   B. IP addressing schemes
   C. Class of networks
   D. Subnetworks
   E. Routers
   F. Protocols
      1. Address resolution
      2. Reverse address resolution
      3. Proprietary routing
   G. Hardware for a LAN
   H. Media selection
      1. Importance and use
      2. Problems and solutions
      3. Standards (IEEE, EIA/TIA, UL)
      4. Telecommunications outlets
   I. Cabling
      1. Safety precautions
      2. Standards (IEEE, EIA/TIA, UL)
      3. Wiring
      4. Testing
V. LAN Design and Installation
   A. Feasibility study
   B. Design of a LAN
   C. Topologies
   D. Wiring closets
   E. Data transmission
   F. Cable termination
   G. Cable installation
VI. Cisco Troubleshooting Procedures
   A. Initial and subsequent testing
      1. Effects of EMI/RFI
      2. Causes of cross talk
   B. Safe wiring systems
   C. Solution strategies

REQUIRED READING: Examples of approved texts include:

Amato, Vito. Cisco Networking Academy Program: Engineering Journal and Workbook. Second Edition. Boston: Cisco Press, 2001.

Lorenz Jim. Cisco Networking Academy Program: Lab Companion. Second Edition. 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 which 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 an average student.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

_____ lecture
_____ laboratory
_X_ 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_X__

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:

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SIGNATURES ON FILE