

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: AP SC 108 Specialized Systems and Supervision Techniques

UNIT VALUE: 4

MINIMUM NUMBER OF SEMESTER HOURS: 96

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: AP SC 107.

COREQUISITE: None.

RECOMMENDED PREPARATION: None.

SCOPE OF COURSE:

Study of specialized building systems including cable television systems (CATV), master antenna systems (MATV), and building automation systems. Training will cover aspects of job administration including personal computer use, job estimating, customer relations, and building system start-up procedures.

SPECIFIC COURSE OBJECTIVES:

The student will be able to:

1. Select appropriate cable for CATV and MATV applications based on signal type and frequency, length of installation, environment, building code, and number of system devices. (II a below)
2. List standard coaxial cable types and their corresponding signal losses. (II d)
3. List signal loss factors of common CATV and MATV devices including taps and splitters. Describe acceptable signal levels, insertion losses, and acceptable carrier-to-noise levels. (II c & II d)
4. Terminate and test coaxial cables of various sizes including RG59, RG6, and RG11.
5. Recognize CATV and MATV standardized symbols and create a drawing of a typical installation using standard symbol conventions. (II b & III)
6. Calculate equalization required for transmission of several frequencies on various cables (RG59, RG6, and RG11) at different distances (tilt and balance). (II e & II g)
7. Test and troubleshoot signal problems using industry-standardized tools and equipment. (II h)
8. Describe major elements of head-end equipment including antenna or satellite options, receivers, modulators, amplifiers, and distribution devices. (II e)
9. Demonstrate advantages and disadvantages of various antenna spacing, stacking, and phasing configurations. (II a & II b)
10. Identify various direct broadcast satellite (DBS) systems, their components, their operating frequencies, and their installation and checkout procedures. (III c)
11. Set up and test a home theater system and optimize the audio and video performance. (IV a)
12. Understand basics of interpersonal communication including conflict resolution & avoidance. (V d)

13. Take off (estimate) a typical job using project analysis to review specifications (general and special conditions), recognize special requirements, determine applicability of proposed system to plans, and prepare system interconnect diagrams. (V e & V f)
14. Demonstrate techniques for system as-built documentation by creating wire routing drawings (red line), as-built equipment drawings, and as-built wire label drawings showing connection type, cable type, and circuit purpose. (V b)
15. Outline procedures for system start up and turnover to customer. (V c)
16. List components of a typical personal computer and describe their purpose. (VI a)
17. Identify personal computer operating systems in common use. Explain the benefits and drawbacks of each. (VI b)
18. Access information from a manufacturer's website for component submittals (dimensions, performance characteristics, etc.), software updates, and system problem resolution. (VI c)
19. Send and receive email. (VI d)
20. Install new software on a personal computer. (VI e)

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Safety
- II. Cable TV Systems
 - a. Cable theory
 - b. CATV Symbology
 - c. Attenuator sizing and installation
 - d. Cable and Equalizer loss calculations
 - e. CATV system head end design and setup
 - f. CATV signal Interdiction
 - g. CATV signal modulation
 - h. CATV troubleshooting
- III. Master Antenna Systems
 - a. Antenna installation and setup
 - b. Antenna spacing, stacking, and phasing
 - c. Direct broadcast satellite (DBS)
- IV. Home Automation
 - a. Home theater/audio
 - b. Video
 - c. Service and troubleshooting
 - d. Consumer Electronics Bus (CEBus)
- V. Job Management Techniques
 - a. Basic estimating
 - b. Job record management
 - c. System startup procedures and turnover to customer
 - d. Customer relations
 - e. Construction documents (Specifications, Plans, Submittals, As-builts, and O&M manuals)
 - f. Change orders (Authority and Legality)
 - g. Job site efficiency
 - h. Job costs

VI. Personal Computers

- a. System components (drives, monitor, CPU, memory, video, peripherals)
- b. Operating systems
- c. Internet site access
- d. Email
- e. Computer program installation

REQUIRED READING:

Blonder Tongue Broadband Reference Guide, Old Bridge, NJ: Blonder Tongue Laboratories, Inc., 2001.

Home Automation Information Sheets, Upper Marlboro, MD: National Joint Apprenticeship and Training Committee, 1999.

Computing Fundamentals Fourth Edition, Columbus, OH: Peter Norton, 2000.

Delmar's Standard Textbook of Electricity 2nd Edition, Albany, NY: Stephen L. Herman 1999.

National Electrical Code (NFPA 70) 1999 Edition Quincy, MA: National Fire Protection Association, Inc., 1998.

SUGGESTED READING:

Principles of Electronic Communication Systems, Westerville, OH: Louis E. Frenzel, 1998.

Raving Fans - A Revolutionary Approach to Customer Service, New York, NY: Ken Blanchard and Sheldon Bowles, 1993.

What Every Supervisor Should Know 6th Edition, New York, NY: Lester R. Bittel and John W. Newstrom.

REQUIRED WRITING:

Completion of written assignments in student workbook. Completion of sketches and drawings as required.

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.

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):

Homework/Participation	5%	100 - 90 = A
Quizzes/Workbook	30%	89 - 80 = B
Unit exams/Final exam	<u>65%</u>	79 - 75 = C
	100%	74 & below = F

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

Yes X No Number of times course may be taken for credit: 2

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable: 58161-1-C

CONTACT PERSON: Director, Occupational and Noncredit Programs, Ext. 2286

SIGNATURES:
