

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 107 Life Safety and Security System Applications

UNIT VALUE: 4

MINIMUM NUMBER OF SEMESTER HOURS: 96

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: AP SC 106.

COREQUISITE: None.

RECOMMENDED PREPARATION: None.

SCOPE OF COURSE:

Continuation of digital theory studies. Instruction expands coverage of Life Safety Systems, and introduces the theory and application of Nurse Call Systems and Security Systems with an emphasis on closed circuit television (CCTV) installations.

SPECIFIC COURSE OBJECTIVES:

The student will be able to:

1. Solve Boolean Algebraic equations.
2. Demonstrate troubleshooting techniques for circuits containing integrated circuits. Isolate and pinpoint problems to the component level.
3. Identify static-sensitive electronic components.
4. Outline procedures required to minimize electrostatic damage to electronic components.
5. Understand and list all National Electric Code (NFPA 70) requirements for the installation of individual Fire Alarm System components and their wiring.
6. Understand and list all National Fire Alarm Code (NFPA 72) requirements for the installation of individual Fire Alarm System components and their wiring.
7. Demonstrate techniques for documentation of fire alarm as-built conditions.
8. Program a fire alarm panel to fit varying site conditions.
9. State purpose and functions of Nurse Call components (master station, room station).
10. Demonstrate how master, audio, presence, emergency, and visual stations are interconnected.
11. Define call points and list their installation requirements.
12. Identify the different voltage levels for specific input and output devices.
13. Troubleshoot common Nurse Call system problems.

14. Explain the function of CCTV system components including lens, camera, transmission media types, multiplexer, matrix switcher, and monitor.
15. Define common CCTV terms such as field-of-view, focal length, CRT, etc.
16. Demonstrate knowledge of camera and enclosure selection based on environmental conditions. Selection parameters include lens focal length, pan/tilt mechanism, switcher selection, scan rate, CCD sensitivity, real time versus time lapse recording, use of video motion detector, and transmission media selection.
17. List requirements for surveillance of specific locations including building lobbies, elevators, retail stores, and banks.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

I. Safety

II. Digital Theory

- a. Applied Boolean Algebra - positive and negative logic
- b. Troubleshooting circuits containing integrated circuits (ICs)
- c. Handling of static-sensitive electronic components

III. Life Safety Systems

- a. Advanced technology systems
- b. National Electric Code (NEC) requirements
- c. National Fire Protection Association (NFPA-72) National Fire Alarm Code requirements
- d. National Fire Protection Association (NFPA-101) Life Safety Code requirements
- e. System documentation procedures

IV. Nurse Call Systems

- a. Master, patient, and staff stations
- b. Installation and planning
- c. Service and troubleshooting
- d. Signal descriptions

V. Closed Circuit Television Systems

- a. Lighting characteristics
- b. Lens, optics, and cameras
- c. Video signal transmission
- d. Monitors, terminals, and video cassette recorders
- e. Video switchers
- f. Camera pan/tilt mechanisms and housings
- g. Video motion detectors and electronic image splitting
- h. Covert CCTV
- i. System power sources
- j. Digital recording

REQUIRED READING:

Digital Electronics Text, Workbook, and Lab Manual, Upper Marlboro, MD: National Joint Apprenticeship and Training Committee, 1994.

CCTV Surveillance Video Practices and Technology, Woburn, MA: Herman Kruegle, 1995.

NJATC Fire Alarms, Upper Marlboro, MD: National Joint Apprenticeship and Training Committee, 1997.

Guide for Proper Use of System Smoke Detectors, Rosslyn, VA: National Electrical Manufacturers Association, 1997.

Guide for Proper Use of Smoke Detectors in Duct Applications, Rosslyn, VA: National Electrical Manufacturers Association, 1995.

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

National Fire Alarm Code (NFPA 72) 1999 Edition, Quincy, MA: National Fire Protection Association, Inc., 1998.

Zetcom II Nurse Call System Technical Manual, Aliso Viejo, CA Zettler Systems, Inc., 1996.

SUGGESTED READING:

Life Safety Code 2000 Edition, Quincy, MA: National Fire Protection Association, Inc., 1999.

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 ON FILE: