

APEL 125A: FIRE ALARM SYSTEMS, EMERGENCY COMMUNICATION SYSTEMS, PUBLIC EMERGENCY SYSTEMS

Foothill College Course Outline of Record

Heading	Value
Units:	5
Hours:	36 lecture, 84 laboratory per quarter (120 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Electrical Apprenticeship Program.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- The student will learn the acceptable code compliance of an emergency generator installation for commercial buildings
- The student will learn the code for installation and testing of audible devices in highrise dwelling units

Description

Introduction to fire alarm systems and their components. Student will be required to demonstrate knowledge in alarm system interfaces, safety control functions, advanced detection topics, emergency communications system, public emergency systems and supervising stations. Comprehension of residential fire alarm systems, telephone and security basics is covered in detail. This course meets the requirements of electrical safety standards for 3rd year apprentices who are pursuing their certificate.

Course Objectives

The students will be able to:

- Read electrical plans and specifications of building alarm systems.
- Build a simple and complex alarm system.
- Inspect, test, and maintain telephone and alarm systems.
- Explain alarm system requirements, initiating devices, notification appliances and wiring methods.
- Understand photo voltaic systems and explain how to properly install these systems.

Course Content

- Electrical Plans
 - Understanding building alarm initiating devices
 - Reading blueprints, recognizing symbols and callouts

- Installation and spacing requirements of initiating devices
- Simple and Complex Alarms
 - Understanding notification devices
 - Understanding audible signaling
 - Visual signaling
 - Emergency communication systems
 - Evacuation signals
 - Household systems
 - Fire protection systems
- Inspect, Test and Maintenance
 - Reading communication/signal drawings
 - Installing telephones systems
 - Testing and troubleshooting system malfunctions
- Alarm System Requirements
 - Understanding security systems
 - Installing security systems
 - Testing and troubleshooting to the component level
 - Fire protection plans and symbols
 - Occupant notification
- Photovoltaic Systems
 - System specs and sizing of photovoltaic systems
 - Installing photovoltaic systems

Lab Content

Students will work individually and in teams on proper wiring of alarm and telephone systems. Safe working practices for on-the-job training include:

- Equipment safety
- Fire protection
- Electrostatic Discharge (ESD)
- Safe handling practices

Special Facilities and/or Equipment

- Work benches
- Alarm system panels and kits
- Telephone panels and kits
- Power tools
- Hand tools
- Computer
- Overhead projector

Method(s) of Evaluation

- Results of quizzes and tests
- Classroom and laboratory participation
- Maintaining a daily student log of work activities
- Results of hands-on laboratory tests

Method(s) of Instruction

- Lecture
- Lab Assignments
- Group Discussion
- Demonstration

Representative Text(s) and Other Materials

Fire Alarm Systems. National Joint Apprenticeship Training Committee. Marlboro, MD, 2016.

Fire Alarm Systems Workbook. National Joint Apprenticeship Training Committee. Marlboro, MD, 2016.

Telephone and Security Basics Workbook . National Joint Apprenticeship Training Committee. Marlboro, MD, 2016.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

A. Reading assignment from the textbook.

1. Read chapters 1-12

B. Writing assignment from the NJATC Telephone and Security Basics Workbook.

1. Complete writing assignments from chapters 1-12 on pages 1-53

Discipline(s)

Electricity