

APSC 122: FIRE ALARM, PAGING, EMERGENCY COMMUNICATION, MASS NOTIFICATION SYSTEMS

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	4
Hours:	40 lecture, 40 laboratory per quarter (80 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Northern CA Sound & Communication JATC Apprenticeship Program.
Advisory:	Not open to students with credit in APRT 133.
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

- A successful student will be able to define security terms.
- A successful student will be able to describe basic telephony devices.

Description

Fundamentals of fire alarm systems, including building a small scale fire alarm system using Norcal's fire alarm trainers, initiating and notification devices, testing and maintenance. In addition, students will study paging system theory, components, installation and troubleshooting. Course concludes with Emergency Communication Systems and Mass Notification systems and code requirements for installation and commissioning.

Course Objectives

The student will be able to:

- Identify specialty electronics devices.
- Interpret specialty system layouts.
- Define devices of fire alarm systems.
- Demonstrate proper wiring of primary and secondary fire alarm system in hands-on training.
- Install and wire paging speakers.
- Install and configure speakers for an Emergency Communications System.

Course Content

A. Specialty systems

1. Introduction to fire alarm systems, initiating devices, notification devices

2. Wire and install devices on a fire alarm system and test
 3. Introduction to paging systems, Emergency Communication Systems (ECS), and Mass Notification systems
 4. Wire and install devices in paging/ECS lab
- B. Layouts
1. Devices/components in a fire alarm system
 2. Devices/components in paging/sound reinforcement systems
 3. Build paging system and cut in speakers in ceiling tiles
- C. Testing and demonstration
1. Testing primary fire alarm systems
 2. Demonstrating secondary systems
 3. Use of impedance bridge to determine speaker line impedance
 4. Demonstrating paging and ECS systems

Lab Content

Work individually and in teams to design and layout fire alarm systems. Students will also design and layout paging and emergency communication systems. Equipment safety and safe handling practices are reviewed and applied.

Special Facilities and/or Equipment

- Audio-visual equipment (laptop, video projector with screen)
- Laboratory with test instruments and hands-on projects
- Computers with internet access
- When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

- Results of quizzes and tests
- Classroom and laboratory project participation
- Online discussion participation

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

- Lecture
- Lab assignment
- Group discussion
- Demonstration

Representative Text(s) and Other Materials

National Joint Apprenticeship and Training Committee (NJATC). [Fire Alarm Systems](#). 2017.

National Fire Protection Association, Inc. (NFPA). [NEC 2017 \(NFPA 70\)](#). 2017.

National Fire Protection Association, Inc. (NFPA 72). [National Fire Alarm and Signaling Code](#). 2016.

These are the standard Sound & Communications textbooks/workbooks used for this course. Although one or more may not be within 5 years of the required published date, they are the most current books used when

teaching this course. We will adopt the next edition of each text, as it is published.

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

A. Readings from assigned textbooks, for example:

1. Chapter 10 of the NFPA 72 2016 Fire and Signaling Code:

Fundamentals

2. Chapter 24 of the NFPA 72 2016 Fire and Signaling Code: Emergency Communications Systems

3. Article 760 of the National Electrical Code 2017

B. Writing assignments, for example:

1. Online discussion/writing assignment: describe the difference between a IDC circuit and a SLC circuit

2. Online discussion/writing assignment: describe the difference between a Emergency Communication System and a Mass Notification system

C. Other:

1. Online videos: videos (created by the JATC) accessed on Canvas CMS, including instruction on the theory of fire alarm systems, paging systems, and ECS

Discipline(s)

Telecommunication Technology