# APEL 119A: ORIENTATION TO THE ELECTRICAL TRADE, CPR, FIRST AID & OSHA 10

## Foothill College Course Outline of Record

| Heading | Value |
|---|---|
| **Effective Term:** | Summer 2025 |
| **Units:** | 2 |
| **Hours:** | 18 lecture, 22 laboratory per quarter (40 total per quarter) |
| **Prerequisite:** | Per California Code of Regulations, this course is limited to students admitted to the San Francisco Inside Wireman Electrical 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

- A student will become CPR certified, understand the OSHA 10 safety requirements and recieve their OSHA 10 certification.Ê
- A student will recall common materials and terminology for electrical work and demonstrate safe work practices when working with materials and tools in a lab setting.Ê

## Description

Orientating new apprentices to the electrical trade. Introduction of materials and tools of the electrical trade. Ladder, power, and hand tool safety. CPR and first aid training and certification. OSHA 10 training and certification.

## Course Objectives

Students will be able to:

1. Demonstrate safe lab practices.
2. Demonstrate proper use of personal protective equipment (PPE).
3. Demonstrate safe hand and power tools usage in the lab environment.
4. Demonstrate how to carry and set up various-sized ladders safely.
5. Distinguish between common electrical materials.
6. Demonstrate correct conductor splicing practices.
7. Construct a functional basic switched electrical circuit.
8. Demonstrate neat and accurate electrical panel make-up.
9. Demonstrate safe tri-vice carrying, set-up, and breakdown.
10. Demonstrate safe large conduit-cutting skills using bandsaws.
11. Apply basic conduit bending skills to bend small EMT conduits 3/4" and smaller.
12. Recognize a medical emergency.
13. Demonstrate how to take control of an emergency scenario and call for professional help.
14. Demonstrate how to provide high-quality adult CPR and defibrillation.
15. Demonstrate how to relieve a foreign body airway obstruction.
16. Identify causes of heart disease and risk factors that can be changed to avoid heart disease.
17. Demonstrate knowledge of basic first aid skills via demonstration and written evaluation for the emergency moving of the injured, controlling severe bleeding/bandaging, traumatic shock, musculoskeletal injuries, concussions, burns, eye injuries, near drowning, allergic emergency, asthma, fainting, diabetic emergencies, drug overdose, poisons, seizures, temperature-related problems, insect stings/bites, animal/human bites, venomous spider/snake bites, jellyfish stings, dental injuries, and suspension trauma.
18. Describe four types of injuries that may result from contact with electricity.
19. Name at least three warning signs or clues an electrical hazard exists.
20. List at least five electrical hazards that may be present at a construction site.
21. Discuss at least three methods of protection from electrical hazards.

## Course Content

1. Cardiopulmonary resuscitation (CPR)
    a. Risk factors that contribute to heart disease and methods of prevention
    b. Identification of emergency scenarios that require intervention
    c. Basic Life Support Sequence for emergency scenarios
    d. Instruction and practice of high-quality CPR on manikin
    e. Instruction and practice of defibrillation techniques
    f. Training on techniques for treating foreign body airway obstruction and simulated thrust practice for clearing airway obstructions
    g. Practice emergency scenarios for students to employ newly learned techniques
    h. Demonstration of CPR skills
    i. Written evaluation of first aid knowledge
2. Basic first aid
    a. Assessing the pulse of a patient
    b. Emergency moving of victims demonstration and practice
    c. First aid skills for controlling severe bleeding/bandaging, traumatic shock, musculoskeletal injuries, concussions, burns, eye injuries, near drowning, allergic emergency, asthma, fainting, diabetic emergencies, drug overdose, poisons, seizures, temperature-related problems, insect stings/bites, animal/human bites, venomous spider/snake bites, jellyfish stings, dental injuries, and suspension trauma
    d. Written evaluation of first aid skills
3. OSHA 10
    a. Injuries that may result from contact with electricity
    b. Warning signs or clues that an electrical hazard exists
    c. Electrical hazards that may be present at a construction site
    d. Methods of protection from electrical hazards

## Lab Content

Introduction of materials and tools of the electrical trade:

1. Introduction to the lab (safety and rules), PPE handed out, functions and rules of the tool rooms
2. Basic hand and power tool introduction and safety
3. Electrical material identification
4. Conductor splicing practice
5. Wiring lab: basic switching and basic panel makeup
6. Proper ladder safety and setup will be demonstrated using various sizes of ladders. Apprentices will also learn how to carry, set up, stand on, and inspect a ladder
7. Tri-Vice safety and setup
8. Large conduit cutting skills using band saws
9. Basic conduit bending techniques and bends
10. Safety and proper care of an electrical meter

## Special Facilities and/or Equipment

1. Lab with electrical tools, including audiovisual equipment (slide, video, and overhead projectors), hand benders, various hand tools, power tools, lights, and switches.
2. Classrooms with projectors.
3. CPR support materials such as CPR manikins, sanitized manikin masks, and disposable airbags for manikins. Practice defibrillator.
4. When taught via Foothill Global Access, on-going access to computer with software and hardware capable of running video conferencing applications (e.g., Zoom).

## Method(s) of Evaluation

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

Results of quizzes and tests
Classroom and laboratory participation
Results of hands-on CPR and first aid tests
Results of hands-on laboratory tests

## Method(s) of Instruction

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

Lecture
Lab assignments
Group discussion
Instructor demonstration
Guided student hands-on applications

## Representative Text(s) and Other Materials

Coyne First Aid. Basic Life Support/First Aid for the Building Trades Reference Manual. 2015.

Mancomm. OSHA Construction Industry Regulations: 29 CFR. 2020.

The latest texts and manuals available are used for these courses, and newer resources will be employed as soon as they are available.

Instructor handouts and lab assignment sheets.

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

1. Read instructor lab sheet handouts before the lab session.
2. Read Coyne's First Aid Handbook on Heart Disease before attending CPR/First Aid class.

## Discipline(s)

Electricity