

SPRING COURSES 2024

# E-CATALOG

# Phoenix Electrical Apprenticeship Program

Phoenix, AZ Since 1943

electrical training  
IBEW - NECA ALLIANCE



# Table Of Contents

## Key



Duration of Course



In Person



Computer Mediated Learning (CML)



Blended Learning



West Campus



Central Campus

**CC**

## Craft Certification

Courses supporting Craft Certification  
Coming Soon

**CET**

## CET Courses

Referral by IBEW LU 640 required

**E**

## Elective

Optional courses for continued education

# CET Courses

Referral by IBEW LU 640 required

Members in good standing who complete courses successfully may qualify for partial reimbursement of their costs. Please inquire at IBEW Local Union 640 for details (may be required to provide course completion certificate and receipt)

# CET 103: BRANCH CIRCUITRY



Enrollment: CW/CE's with referral  
from IBEW LU 640 only

## Objective:

Fundamentals of GFCI Protected and Unprotected circuits, Emphasis on essential concepts relating to LO/TO, Ground Fault Circuit Interrupter operation and mitigation. Incorporating one-line diagrams, Hands-on installation of branch wiring and device termination and testing.

## Recommended Prerequisites:

N/A

## Materials Required:

Gloves, Safety Glasses, Worksite Attire

Price:

\$50.00



Enrollment: CW/CE's with referral  
from IBEW LU 640 only

# CET 104: BRANCH CIRCUITRY

## Objective:

Fundamentals of 3 and 4 way Switching, Emphasis on essential concepts relating to LO/TO, schematic and one line diagrams, 3 and 4 way wiring configuration and Hands on installation of branch wiring and device termination and testing.

## Recommended Prerequisites:

N/A

Price:

\$50.00

## Materials Required:

Gloves, Safety Glasses, Worksite Attire

# CET 101: MOTOR CONTROLS



Enrollment: CW/CE's with referral  
from IBEW LU 640 only

## Objective:

Fundamentals of Basic Motor Controls. Emphasis on essential concepts relating to LO/TO, HV & LV motor connections, overload protection, basic motor control principles, Ladder diagrams, motor starter operation and start/stop station operation. Hands on installation of Line/Load and control wiring and device termination and testing.

## Recommended Prerequisites:

N/A

## Materials Required:

Gloves, Safety Glasses, Worksite Attire

Price:

\$50.00

# CET 101: MOTORS



Enrollment: CW/CE's with referral  
from IBEW LU 640 only

## Objective:

Introduction to 9 Lead Motors. Emphasis on essential concepts relating to LO/TO, HV & LV motor connections, reversing motor direction principles, incorporating basic motor control wiring diagrams and operation. Hands on installation of Line/Load and control wiring and device termination and testing in an elevator pit type scenario.

## Recommended Prerequisites:

N/A

Price:

\$50.00

## Materials Required:

Gloves, Safety Glasses, Worksite Attire

# CET 101: TRANSFORMERS



Enrollment: CW/CE's with referral  
from IBEW LU 640 only

## **Objective:**

Fundamentals of Transformer principles, Emphasis on Magnetism and Electro-magnetism, operation principles, Transformer connections, and real world connections. Incorporating line and load wiring, transformer and device termination.

## **Recommended Prerequisites:**

N/A

## **Materials Required:**

Gloves, Safety Glasses, Worksite Attire

Price:

\$50.00

# E Courses

Optional courses for  
continued education

Members in good standing who complete courses successfully may qualify for partial reimbursement of their costs. Please inquire at IBEW Local Union 640 for details (may be required to provide course completion certificate and receipt)

# E 500: BASIC LIFE SUPPORT AND FIRST AID



Enrollment: Open

## Objective:

Emphasis on the electrical construction industry. Learn and practice life saving CPR and first aid based on the latest evidence based guidelines promoted by the International Liaison on Resuscitation.

## Recommended Prerequisites:

N/A

## Materials Required:

N/A

Price:

\$35.00

# E 100: CODEOLOGY



Enrollment: Open

## Objective:

Overview of the 2020 National Electrical Code. Emphasis on essential concepts relating to the Codeology method: Planning the installation, Building the installation, Using the Electricity, Special Occupancies, Special Equipment, Special Conditions, Communications, and Informative Annexes.

## Recommended Prerequisites:

N/A

Price:

\$185.00

## Materials Required:

2020 Codeology Textbook and 2020 Code Book



# E 102: CONDUIT BENDING



Enrollment: Open

## Objective:

Review and fabrication of Back-to-Back 90° bends utilizing ½” EMT, Emphasis on essential concepts and basic principles of measurement, shrink/gain, deduct/take up and bend mark layout calculations.

## Recommended Prerequisites:

N/A

## Materials Required:

Gloves, Safety Glasses, Worksite Attire

Price:

\$50.00



Enrollment: Open

# E 104: CONDUIT BENDING

## Objective:

Review and fabrication of Parallel Offset bends utilizing ½” EMT, Emphasis on 30° & 45° parallel offsets, with instruction on principles of measurement, shrink, degree multipliers, offset rise and bend mark calculations.

## Recommended Prerequisites:

N/A

Price:

\$50.00

## Materials Required:

Gloves, Safety Glasses, Worksite Attire

# E 105: CONDUIT BENDING



Enrollment: Open

## Objective:

Review and fabrication of 3 & 4 bend saddles utilizing ½” EMT, Push Through method with Emphasis on shrink, degree multipliers, offset rise and bend mark position calculations and essential concepts and problem-solving techniques incorporating basic principles of measurement.

## Recommended Prerequisites:

N/A

## Materials Required:

Gloves, Safety Glasses, Worksite Attire

Price:

\$50.00



Enrollment: Open

# E 501: CONDUIT SYSTEM FAB

## Objective:

This course covers essential knowledge of various conduit systems and their installation, focusing on basic to intermediate conduit bending techniques and calculations, including 90-degree bends, offsets, kicks, saddles, and more.

## Recommended Prerequisites:

N/A

Price:

\$235.00

## Materials Required:

Conduit Fabrication and Math Text Book

# E 501: CONSTRUCTION DRAWINGS



Enrollment: Open

## Objective:

Enhance your proficiency by gaining a thorough understanding of construction drawings. This course emphasizes the design process, covering scaling, dimensions, plan views, elevations, details, sections, schedules, and specifications.

## Recommended Prerequisites:

N/A

## Materials Required:

Blueprint Reading Text Book, Commercial Blueprint Set, and an Architecture Scale

Price:

\$165.00



Enrollment: Open

# E 500: CONSTRUCTING YOUR FUTURE

## Objective:

This course offers an overview of construction trades apprenticeship programs, highlighting the benefits of different programs, exploring various construction trades, and outlining potential career paths for successful apprentices.

## Recommended Prerequisites:

N/A

Price:

\$30.00

## Materials Required:

N/A

# E 500: Electric Vehicle Charging Systems



Enrollment: Open

## Objective:

Electrical vehicle charging equipment advanced load calculations based on the NEC, Site assessment, Commissioning, and Trouble shooting.

Please email [webservices@pejatc.org](mailto:webservices@pejatc.org) to get information on the EVITP courses.

## Recommended Prerequisites:

N/A

## Materials Required:

N/A

Price:

\$135.00

# E 501: ELECTRICAL JOB INFORMATION

## Objective:

This course covers the basics of types of construction, conductors, hand tools, materials, fasteners, anchors, safety, sizing wire, and more—emphasizing essential knowledge for the electrical worker.

## Recommended Prerequisites:

N/A

Price:

\$80.00

## Materials Required:

N/A



Enrollment: Open

# E 501: ELECTRICAL THEORY



Enrollment: Open

## Objective:

This course delves into the fundamental principles of direct current theory and circuit operation, with a focus on interpreting the dynamics of series, parallel, and combination circuits.

## Recommended Prerequisites:

N/A

## Materials Required:

N/A

Price:

\$400.00



Enrollment: CW/CE's and  
Journey level workers only

# E 500: FOREMAN DEVELOPMENT 1&2

## Objective:

Module 1

Subject matter covered in this module is as follows: The Role of the Foreman

Module 2

Subject matter covered in this module is as follows: Project Start-up

## Recommended Prerequisites:

N/A

Price:

FREE

## Materials Required:

N/A

# E 500: FOREMAN DEVELOPMENT 3&4



Enrollment: CW/CE's and  
Journey level workers only

## Objective:

Module 3

Subject matter covered in this module is as follows: Material Management

Module 4

Subject matter covered in this module is as follows: Labor Relations

## Recommended Prerequisites:

N/A

## Materials Required:

N/A

Price:

FREE

# E 500: FOREMAN DEVELOPMENT 5&6



Enrollment: CW/CE's and  
Journey level workers only

## Objective:

Module 5

Subject matter covered in this module is as follows: Understanding the Estimate

Module 6

Subject matter covered in this module is as follows: Labor-Loading Project

## Recommended Prerequisites:

N/A

Price:

FREE

## Materials Required:

N/A

# E 500: HARASSMENT PREVENTION



Enrollment: Open

## Objective:

This session provides a review of harassment, including its definition, preventative measures, and appropriate steps to take if an incident occurs.

## Recommended Prerequisites:

N/A

## Materials Required:

N/A

Price:

\$20.00



Enrollment: Open

# E 500: INTRO TO BUILDING INFORMATION MODELING

## Objective:

As modern technology becomes integral to construction sites, a working understanding of Building Information Modelling (BIM) is increasingly essential. This introduction to BIM equips electricians with the necessary knowledge for navigating the demands of contemporary construction projects.

## Recommended Prerequisites:

N/A

Price:

\$115.00

## Materials Required:

N/A

# E 501: MOTOR CONTROLS



Enrollment: Open

## Objective:

As modern technology becomes integral to construction sites, a working understanding of Building Information Modelling (BIM) is increasingly essential. This introduction to BIM equips electricians with the necessary knowledge for navigating the demands of contemporary construction projects.

## Recommended Prerequisites:

N/A

## Materials Required:

N/A

Price:

\$165.00

# E 501: NFPA 70 E



Enrollment: Open

## Objective:

Recognition and understanding of electrical safety culture, electrical hazards, LO/TO, fault current calculation basics, and the definition of an electrically safe work condition.

## Recommended Prerequisites:

N/A

Price:

\$25.00

## Materials Required:

N/A



# E 500: OSHA 10



Enrollment: Open

## Objective:

Course covers workplace hazards, employee rights, improving safety culture, and other key topics to prepare participants for identifying hazards on electrical construction jobsites.

## Recommended Prerequisites:

N/A

## Materials Required:

N/A

Price:

\$40.00



Enrollment: Open

# E 500: READING COMPREHENSION

## Objective:

Mastering workplace reading skills is crucial for safety and job success. This course is designed to teach effective strategies for capturing the most pertinent information within a text.

## Recommended Prerequisites:

N/A

Price:  
\$30.00

## Materials Required:

N/A

# E 500: TECH MATH



Enrollment: Open

## Objective:

The Tech Math course offers a comprehensive review of essential mathematical skills, with a specific emphasis on those required for individuals in the electrical industry.

## Recommended Prerequisites:

N/A

## Materials Required:

N/A

Price:

\$130.00