



## choice

The electrical profession is one of the most widely recognized of all the construction trades.

# OACES ELECTRICAL PROGRAM

The OACES Electrical Program will provide students the skills necessary to enter the electrical industry. Topics covered include residential and commercial wiring, related math, blueprint reading, wiring schematic's, raceway installation, trouble-shooting, fire alarm, security systems, low voltage systems, 10 and 30 systems, and construction safety. Curriculum consists of 20% lecture and 80% is hands-on performance based. Students will learn electrical theory through hands-on practical performance projects and lectures/lessons. Upon completion, the student will be prepared for direct entry into the work place or post-secondary education.

**Training Duration:** 624 hours (3-6 months)

**Schedule:** 9:00 a.m. - 3:30 p.m., 5 days a week schedule, Monday–Friday

**Admission/Academic Requirements:** Class open to all students. No technology experience required.

**Performance Expectations:** Must maintain OACES minimum attendance requirements, motivation to learn, ability to work with others and conform to rules, directions, and safety procedures.

**Costs:** Tuition for Electrical Program is \$5,000. Financial Assistance for Career Training classes will be assessed on an individual basis at Intake.

### REFUND POLICY

**Class Cancellation:** If OACES cancels a class cohort for any reason and a student has paid tuition, 100% of the tuition paid will be refunded within 45 days of the scheduled class start date.

**Tuition Refund:** If a student chooses to withdraw or otherwise has their enrollment terminated, they are required to complete the Withdrawal Form including all signatures. The student will submit the form to the Registrar. The date of Withdrawal is based on the Last Date of Attendance (LDA) to class as recorded in OACES official attendance records. The refund will be based on the following chart:

- Withdrawal before the start of class: 100% of tuition.
- Withdrawal before the end of the fourth week of classes: 100% of tuition.
- Withdrawal after the end of the fourth week of classes: No tuition refund.
- Any refund of paid tuition will be refunded within 45 days of the date the Withdrawal Form was submitted to the Registrar.

## Career Opportunities

- According to the Bureau of Labor Statistics, the average annual salary of electricians was \$61,550 in 2020.
- Some career opportunities include: residential electrician, commercial electrician, power-line installer, voice and data installer, building/electrical inspector, maintenance worker, security and fire alarm installer, renewable energy installer and electrical product inventory control manager.



## Program of Study & Technical Competencies

### Electrical Orientation & Safety

- Demonstrate proficiency in electrical and construction safety
- Identify various career paths in the electrical industry and the expectations for each
- Explain the purpose of a lock-out/tag-out/block-out program
- Be familiar with electrical industry vocabulary
- Maintain OACES minimum attendance standards
- Complete 10-hour safety course

### Hand & Power Tools

- Identify various hand and power tools used in the electrical industry
- Demonstrate the safe use of various hand and power tools
- Recognize worn or damaged tools for replacement or repair
- Demonstrate mastery reading rulers and tape measures

### Electrical Theory

- Recognize the difference between AC and DC circuits
- Use basic math as it pertains to the electrical industry
- Recognize the difference between series and parallel circuits
- Apply Ohm's Law to resistance, voltage and current
- Recognize where to find code articles using the National Electrical Code (NEC)
- Explain the operation of transformers and power transmission
- Recognize and use various electrical meters and test equipment
- Identify how to troubleshoot basic electrical circuits

### Wiring Systems

- Understand various conductors and cables
- Make safe conductor splices and connections
- Determine the correct conductor size based on circuit load
- Recognize and explain the basics of conduit bending
- Recognize and install various raceway systems
- Identify and install various fittings, fasteners and other materials
- Recognize and install receptacles and switches
- Understand cable TV, phone and computer network wiring

### Overcurrent Protection & Grounding

- Explain the causes of overcurrent
- Identify and explain electrical overcurrent protective devices (OCPDs)
- Explain the operation of a ground-fault circuit interrupter (GFCI) and arc-fault circuit interrupter (AFCI) and how they are used

### Electrical Prints & Specifications

- Identify the types of prints that an electrician may read
- Recognize and use standard parts of a drawing
- Recognize and use standard electrical symbols
- Develop one-line and wiring diagram drawings

### The Service Entrance

- Calculate the number of branch circuits for a residential dwelling
- Identify proper conductors and components of the service entrance
- Identify different circuit breakers and their application
- Install an electrical service per NEC
- Understand power distribution from utility to a residential dwelling
- Be familiar with grounding and bonding requirements

### Green Technology

- Identify and use various alternative energy systems

### Certifications/Instructional Outcomes

- Basic Electrical Soldering
- Electrical Level I (Residential Wiring)
- Electrical Level II (Commercial Wiring)
- Electrical Service Installation
- 10-hour Occupational Safety & Health Administration (OSHA) "Construction Industry" Completion Card
- Amatrol Green Energy