

# ELECTRICAL SYSTEMS

NYS CIP CODE: 46.0302

## Program Summary

- This program focuses on the importance of safety, theory, and application of all facets of the electrical industry.
- Students have the opportunity to complete a 30-hour internship with electricians in the field.
- Students will learn the codes associated with the electrical industry.
- Solar and wind technology is an emphasis of this program.

## College Credit Connections

- Alfred State College
- Lincoln Technical Institute
- SUNY Erie

## Additional Information

- Boots or safety shoes are required for this program.

## Career Pathways

### Professional Careers

Electrical Construction & Maintenance Management  
Electrical Engineer  
Electrical Inspector  
Maintenance Technician  
Solar Technician (Photovoltaics)  
Utility Scale Worker  
Wind Turbine Technician

### Technical Careers

Audio Service Technician  
Automotive Electrician  
Commercial Electrician  
Electrical Sales Representative  
Residential Electrician

### Entry Level Careers

Apprentice  
Electrician Helper



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## The Basics

- Electrical Safety
- Trade Measurements
- Hand Tools
- Technical Calculations
- Basic Equipment and Procedures
- Wiring Methods

## Electrical Circuits I

- Power Calculations
- Specialized Tools and Equipment
- Circuit Fundamentals
- Magnetism
- Raceways and Fittings

## Electrical Circuits II

- Combination Circuits
- Trouble Shooting Methods
- Electrical Testing
- Cable
- Proper Enclosure Installation
- Ohm's Law

## Residential and Blue Print Reading

- Electrical Construction Drawings
- Overcurrent Protection
- Lighting
- Residential Service Installations
- Load Center Calculations
- Commercial and Industrial Services

## A/C Theory

- Single / Three Phase Distribution
- Transformers
- A/C Theory
- OSHA 10 Safety Certification

## Motor Controls

- Conductor Terminations and Splices
- Control Circuit Fundamentals
- Motor Controls
- Motor Theory and Application

## Renewable Technologies

- Renewable Energy
- Photovoltaic Systems
- Wind Technology
- Battery Technology
- Inverters and Application

## Control Systems and Internships

- Circuit Breakers and Fuses - Calculations and Applications
- Three Phase Motors
- Contractors and Motor Starters
- Financial Literacy
- Internship

