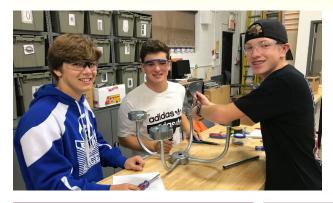
Residential and Commercial Electrical



"Enlighten" your future



Learn electrical theory, wiring, and to interpret and apply the requirements of the National Electric Code for residential and commercial construction projects.

Units of Study

- Electrical Fundamentals
- Introduction to The National Electrical Code
- Conductor Properties
- Basic Wiring Methods
- Basic Electrical Installations/ Grounding
- Emergency Power
- Electrical Planning
- Specialized Electrical Installations
- Professional Techniques for Electricians
- Advanced Wiring Methods
- Advanced Electrical Installations/ Grounding
- Advanced Branch Circuits and Feeders
- Transformers
- Basic Motor Control
- Alternative Energy-Wind/Solar

Integrated Academics

- English
- Science

Licensing / Industry- Based Certifications

OSHA 10 Construction Industry

Work-Based Learning

CTE programs bring students into the workplace for real life experiences. Businesses that support our Electrical program:

- Citygate Electric
- CM Armitage
- Horizon Solutions
- Monroe 2 BOCES Operations and Maintenance
- RADEC Corporation

Articulation Agreements Alfred State





WEMOCO Career & Technical Education Center Monroe 2-Orleans Board of Cooperative Educational Services Monroe2BOCES.org/cte 585-352-2471 3589 Big Ridge Road, Spencerport, New York 14559



Career Outlook

All CTE programs correlate to many careers paths. Use the links below to explore more. One example:

Job Projections for Electricians: 13% projected growth in New York State jobs 2016-2026.

New York State salary range: \$42,390 entry level- \$95,570 experienced

Education Requirements: Electricians often are trained through a career and technical education program, or through an apprenticeship.

Explore more:

https://www.careerzone.ny.gov/ https://www.onetonline.org/find/





Residential and Commercial Electrical



Employability Profile

Career Readiness	Electrical Fundamentals	Electrical Installation	Motors and Motor Control
Attendance	Ohms Law	Calculate size of service, minimum	Types of single phase motors
Punctuality	Series Circuits	number of circuits required for residence size & equipment to be installed	Three Phase Motors
Appropriate Workplace appearance	Parallel Circuits	Locate device boxes and correct	Size motor replacement by use of
Takes Initiative	Complex circuits	wiring for residential circuits using the NEC	Distinguish and select correct motor
High Quality of work	Power Formula	Install single pole switch circuits,	enclosure types based on applications
Knowledge of workplace ethics	National Electrical Code	3-way switch circuits, 4-way switch	AC motor wire and fuse installation
Responsive to supervisor	Identify via the NEC book -circuits.	Install switched outlet circuits	Install 3 wire motor control for
Effective Communication skills	devices and wiring code	Install GFCI receptacles and	Start/Stop
Solves problems	requirements for installing cables	Install Arc Fault Circuit breakers	replacing contact, coils and
Makes decisions	Utilize the NEC for ground fault	Installing duplex outlet circuits in	Troubleshoot 3 wire motor control
Cooperates with others	circuit requirements	both 15Å and 20Å configurations	circuits Use the NEC to correctly size motor
Resolves conflict	Utilize the NEC for specialized	Size and install Range and Dryer	wire and components
Observes critically	Utilize the NEC for arc fault circuit requirements	circuits	Solar Energy
Takes responsibility for learning	Utilize the NEC for grounding and	Electrical Planning	Demonstrated ability To Work With
Reads with understanding	bonding requirements	Read Blueprints for Residential	Solar Panels Safely Locate and Site Solar Panels
Solves problems using math	Tools and Testing	Read Blueprints for	Determine System Types- Grid-Tie,
Complies with health and safety	Use of Hand tools	Commercial/Industrial construction	Storage or Back-up Systems
Uses technology appropriately	Use of Power tools	Interpret Specifications on prints	Technical Math
Safety	Use of Voltage Meter	Specialized installations	Use Ohms Law for circuit Calculations
Completed OSHA 10 for Certification	Use of Ohm Meter	Farm wiring	Use Formula for Box Fill
Use of Personal Protective	Use of Amp Meter/current clamp	Mobile Home Wiring	Use formula For Conduit Fill
Equipment	Wiring Methods	Swimming Pool Wiring	Use Formula For Voltage Drop of
Recognize potential accident issues	Non Metallic Sheathed Cable	Telephone and Computer	Wire
Lock-out/Tag-out procedures	Conduit	Emergency and Standby systems	
Inspection of power and hand tools	Armored Cable		
Fire Safety	Flexible conduit	Electrical Professions and Techniques Electrical Remodeling	
First Aid	PVC conduit	Maintenance and Trouble shooting	
Ladder Safety		Electrical Careers	