

ELECTRICAL OCCUPATIONS

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COURSE OBJECTIVE

Students will obtain the education and skills needed to work as Electricians or Electrical Technicians. Students will be instructed in numerous phases of new and old electrical systems installation. Students will also install and maintain small solar/wind systems.

COURSE DESCRIPTION

Tenth, eleventh and twelfth grade students are prepared for employment in the fields of residential, commercial and industrial wiring and the installation and maintenance of equipment including electrical service entrance panels, lighting systems, communications systems and related equipment, PV (Photovoltaic) systems and wind turbine systems.

COURSE TOPICS

Communication Technology | Conduit Bending | Construction Safety | Electrical Lighting | Electrical Theory
Employability Skills | National Electric Code | NFPA 70E | Power Transmission | OSHA
Residential, Commercial and Industrial Wiring

REQUIRED SUPPLIES

Leather Work Boots with Raised Heel | Mechanics Gloves | Safety Glasses | Shop Shirt (Gray Polo)
25-Foot Push-Pull Tape Measure | Workwear Pants (Black) | (2) Packs #2 Pencils | Notebook Paper
(2) 3-Ring Binders | (50) 8-1/2 x 11 Sheet Protectors

TEXTBOOKS

National Electric Code; 2017
NCCER: Core Safety Curriculum; Pearson Education; 2020
NCCER: Electrical Levels 1; Pearson Education; 2017

COOPERATING COMPANIES

IBEW Local No. 5–Pittsburgh, PA
Kosol Electric–Burgettstown, PA
PoleSet, LLC–Prosperity, PA

Tri-State Supply Company–Washington, PA
Scott Electric–Greensburg, PA
West Penn Wire Corporation CDT–Washington, PA

SPECIALIZED SHOP EQUIPMENT

Boards Trainer | CCTV Trainer | Lockout/Tagout Trainer | Solar/Wind Trainer | Telecommunications Trainer
Two-Story, Mock House with Stud-Framed Walls

CERTIFICATIONS

American Ladder Institute: Articulated Ladder; Mobile Ladder; Single & Extension Ladder; Step Ladder
CareerSafe OSHA
National Center for Construction Education and Research (NCCER) Electrical Level I Credentials and Core Curriculum Credentials
Residential Construction Academy (RCA) National Registry

ARTICULATION AGREEMENTS

Penn Commercial Business/Technical School
Pittsburgh Technical College
Rosedale Technical College
Statewide SOAR
Triangle Tech, Inc.

POST-SECONDARY TRAINING OPTIONS

ABC Western Pennsylvania–Apprentice Training Program
California University of Pennsylvania
Community College of Allegheny County
International Brotherhood of Electrical Workers, Local No. 5
Penn Commercial Business/Technical School
Pennsylvania College of Technology–Penn State
Pittsburgh Institute of Aeronautics
Pittsburgh Technical College
Rosedale Technical College
Triangle Tech, Inc.

POTENTIAL CAREERS

Electrical Control Technician | Electrical Inspector | Electrical Sales | Industrial Machinery Mechanic
Journeyman Electrician (Residential, Commercial) | Maintenance Electrician | Marine/Aviation Electrician
PV (Photovoltaic) Installer | Security Systems Technician | Wind Turbine Technician

ELECTRICIAN SKILLS

Installation — Installing electrical systems to meet minimum NEC® specifications.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate and not interrupting at inappropriate times.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Troubleshooting — Determining causes of operating errors and deciding what to do to correct issues.

Equipment Selection — Determining the kind of tools and equipment needed to do a job.

Repairing — Repairing machines or systems using the needed tools.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

WAGES AND EMPLOYMENT TRENDS FOR ELECTRICIANS

Median Wages (2020)	\$27.36 Hourly, \$56,900 Annually
Number of Jobs (2019)	739,200 Employees
Job Outlook (2019–2029)	8% (Much Faster Than Average)
Employment Change (2019–2029)	62,200

Source: *Occupational Outlook Handbook*

WESTERN AREA CAREER & TECHNOLOGY CENTER
ELECTRICAL OCCUPATIONS
2021-2022 Shop Requirements

Shop Uniform/Accessories

- Gloves (Mechanics Type)
- Hat with Shop Logo (Optional)
- Leather Work Boots with Raised Heel
- Polo Shirt, Gray (Use Enclosed Order Form)
- Safety Glasses (First Pair Provided by Western Area CTC)
- Workwear Pants, Black
- 25-ft. Push-Pull Tape Measure
- (1) Ream College-Ruled Notebook Filler Paper
- (2) 3-Ring Binders (1-inch)
- (2) Packs #2 Pencils
- (50) 8-1/2 x 11 Sheet Protectors

APPROXIMATE COST: \$140

Hats with the shop logo may be worn in the shop, but are not mandatory. No other hats are permitted. Order uniform polo shirts and hats by mailing the enclosed order form to TNT Manufacturing or by ordering online at companycasuals.com/WACTC. All uniform orders are delivered to Western Area and will be distributed to students after the start of the school year.

Uniform pants may be purchased at any discount chain or department store. Workwear brands such as Dickies, Dockers and Carharrt are suggested. Lost or broken safety glasses may be replaced throughout the school year in the Main Office. Cost is approximately \$3.

Clinical activities/learning situations may require that any body piercings be removed and any tattoos covered. ***No metal tongue piercings! Plastic only!***

Students may be required to wear professional clothing for vocational student organization conferences, competitions and meetings.

All criteria is subject to change.