

# BARR CONSTRUCTION INSTITUTE

## ELECTRICAL APPRENTICESHIP



All students start out with basic safety and construction jobsite skills. After learning the basics, they continue on to advanced electrical skills in year four. Class time is split between traditional class lectures and practical lab time where students have the opportunity to apply what they have learned.

LEARN MORE:

**240-500-2715**

[www.hagerstowncc.edu/bci](http://www.hagerstowncc.edu/bci)

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Located at:

D.M. Bowman Family Workforce Training Center  
562 Northern Avenue  
Hagerstown, MD 21742

**[WWW.HAGERSTOWNCC.EDU/BCI](http://WWW.HAGERSTOWNCC.EDU/BCI)**

# Electrical Apprenticeship Courses

## Level One:

- Basic Safety
- Introduction to Construction Math
- Introduction to Hand Tools
- Introduction to Power Tools
- Introduction to Construction Drawings
- Introduction to Basic Rigging (7.5 elective hours)
- Basic Communication Skills (3 hours)
- Basic Employability Skills
- Introduction to Materials Handling
- Occupational Overview: The Electrical Industry
- Safety For Electricians
- Introduction to Electrical Circuits
- Electrical Theory
- Introduction to the National Electrical Code
- Outlet, Device, Pull and Junction Boxes
- Hand Bending
- Wireways, Raceways, and Fittings
- Conductors and Cables
- Basic Electrical Construction Documents
- Residential Wiring
- Electrical Test Equipment

## Level Two:

- Alternating Current
- Motors: Theory and Application
- Electrical Lighting
- Conduit Bending
- Pull And Junction Boxes
- Conductor Installations
- Cable Tray
- Conductor Terminations and Splices
- Grounding and Bonding
- Circuit Breakers and Fuses
- Controlled Systems and Fundamental Concepts

## Level Three:

- Load Calculations
- Conductor Selection and Calculations
- Practical Applications of Lighting
- Hazardous Locations
- Overcurrent Protection
- Distribution Equipment
- Transformers
- Commercial Electrical Services
- Motor Calculations
- Voice, Data and Video
- Motor Controls

## Level Four:

- Load Calculations – Feeders and Services
- Healthcare Facilities
- Standby And Emergency Systems
- Basic Electronic Theory
- Fire Alarm Systems
- Specialty Transformers
- Advanced Controls
- HVAC Controls
- Heat Tracing and Freeze Protect Protection
- Motor Operation and Maintenance
- Medium – Voltage, Terminations, and Splices
- Special Locations
- Introduction To Leadership