

## Basic Residential Electric for the DIY Homeowner and Contractor

30 Hours

This course is designed to provide students with a basic overview of residential electrical wiring methods, products, devices and installation practices as it applies to a DIY homeowner or home improvement contractor. This will be related to the purposes of installing, upgrading, troubleshooting and repairing basic home electrical wiring and devices. We will focus on 'branch circuits' between the breaker panel and attached end devices, starting with 120v 15-amp and 20-amp circuits for lighting, switching, and receptacle outlets. The class will also cover the basics of wiring and power distribution methods for 240v loads such as Electric Ranges/Ovens, Water Heaters, Baseboard Heaters, A/C Units, Well-Pumps, EV Chargers and more!

The course will cover the following topics:

- The history of residential cable & wiring methods. (ex: knob-n-tube, cloth insulation, aluminium vs. copper conductors, introduction of 'ground' wires, NM non-metallic 'Romex' cable and modern raceway types).
- Safety: tools & guidelines to disconnect power and confirm de-energization of equipment prior to work.
- Hand-Tools, Power-Tools & Specialty tools for residential wiring projects.
- Cable & wire types, sizes/ampacities and best practices for cable routing, installation and associated National Electrical Code requirements.
- Light fixture luminaire and lamp/bulb types, 1-pole, 3-pole and 4-pole switching and dimming control.
- 120v duplex receptacle and GFCI receptacle outlet installation, 240v and residential higher ampacity circuit, outlet and appliance wiring best practices.
- Breaker Panel Basics: circuit breakers, neutral and ground bars and the basics of landing branch circuits in a panel.
- Specific methods of wiring projects in existing homes, including through/behind finished wall surfaces, attic crawlspaces, etc.
- Troubleshooting techniques and tools for assessing common electrical problems.

*Classes will be held on Saturdays from 8:00am-2:00pm in the Jeff Tech Electrical classroom.*

**Course Length:** 30 hours

**Course & Supply Costs:** \$325.00

**Class Dates:** March 14, March 28, April 11, April 25 and May 9, 2026

**CLICK HERE REGISTER AND PAY ONLINE**

Classes are filled on a first come first serve basis.

Please contact the Adult Education Office by phone at 814-201-9837 or email to [mnbundy@jefftech.edu](mailto:mnbundy@jefftech.edu) for additional information.

As always, Thank you for choosing Jeff Tech!