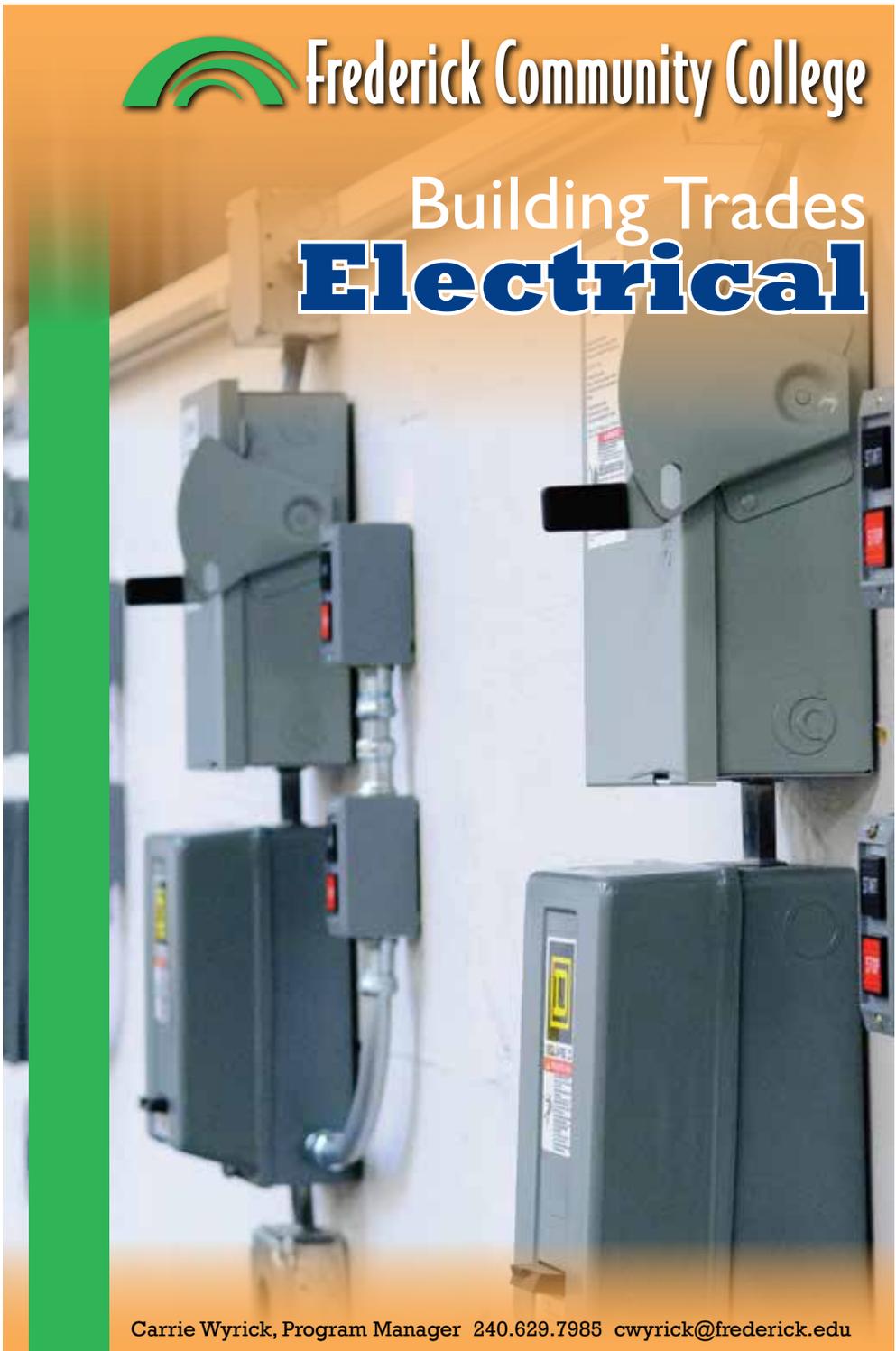




# Frederick Community College

## Building Trades **Electrical**



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### CREDIT TRACK 3: ELECTRICAL

Class	Letter of Recognition	Career Certificate	Prerequisites
BLD 101 Introduction to Building Trades	3	3	EN 51 or ESL 97
BLD 141 Electrical Theory & Fundamentals	4	4	EN 51 or ESL 97
BLD 142 Electrical code & Application	4	4	BLD 141
BLD 145 Commercial Electrical Application		4	BLD 142
BLD 146 Specialized Systems		4	BLD 142
BU 274 Customer Relations		3	EN 50A/EN 52 or ESL 95/ESL 99
INTR 102 Internship (Optional)		2	
<b>Total credits</b>	<b>118</b>	<b>22-24</b>	

### CONTINUING EDUCATION CERTIFICATE: ELECTRICAL

Class	Continuing Education Certificate	Prerequisites
ELC 120 Electrical Theory & Fundamentals	90 hours	EN 51 or ESL 97
ELC 121 Electrical Code & Application	90 hours	ELC 120
ELC 122 Commercial Electrical Application	90 hours	ELC 121
ELC 123 Specialized Systems	90 hours	ELC 121
<b>Total Hours</b>	<b>360 hours</b>	

# Building Trades Electrical



## **FCC's Electrical Trades Program**

Frederick Community College offers a tiered set of training options to individuals seeking entry-level employment or career advancement within the electrical trade. Coursework completed at each tier for a specific trade (known as a "track") may be applied to the next level to acquire additional skills and training.

### **Continuing Education Units (CEUs)**

formal recognition of an individual's completion of a designated program - many professionals are required to earn CEUs to verify ongoing professional development.

### **Continuing Education Certificate - Career Training**

Awarded upon successful completion of four basic 90-hour electrical courses offering fundamentals, application and specialized training.

### **Letter of Recognition (LOR) - (11 credits)**

Introduction to the basics of electricity and electrical work with a focus on safety, schematics, print reading and the role of the National Electrical Code. Participant demonstrates basic skills and knowledge required for immediate entry-level employment.

### **Career Certificate - (22-24 credits)**

To further build an individual's knowledge of the electrical trade, the program incorporates advanced applications for low voltage and commercial electrical wiring as well as customer relations and opportunities for internship. Earned within a specialized discipline, the certificate is often designed for individuals seeking specific skills for entry into the job market.

The college prohibits discrimination against any person on the basis of race, religion, gender, color, national origin, ancestry, age, sexual orientation, marital status, physical or mental disability of otherwise qualified individuals and any other category protected by federal, state or local law. Frederick Community College subscribes to full access to all college facilities as outlined in the Americans with Disabilities Act of 1990 and as amended. The designated coordinator for the college's compliance with Section 504 of the Rehabilitation Act of 1973 and for the Americans with Disabilities Act is Kate Kramer-Jefferson, 301.846.2409.

**Accommodation Statement** Frederick Community College makes every effort to accommodate individuals with disabilities. If you have accommodation needs, please call 301.846.2408. To request a sign language interpreter, please call 301.846.2476 (Voice) or 240.575.2366/866.616.7243 (Videophone). Requests for any accommodation should be made at least five working days prior to attending a scheduled event.

**Gainful employment** For more information about our graduation rates, the median debt of students who completed the program, and other important information, please visit our website at [www.frederick.edu/gainfulemployment](http://www.frederick.edu/gainfulemployment).

### **Program Costs**

Actual costs vary for in-county and out-of-county residents. FCC provides a tuition payment plan for most programs. Scholarship and loan assistance is available for eligible students. Visit us on campus or online at [www.frederick.edu](http://www.frederick.edu) for updated course schedules, tuition and fee information.

### **Mission**

Provide students with a comprehensive mixture of academic and practical training in the areas involved in building trades technology.

### **Goals**

Students will gain general knowledge of equipment and materials and develop skills required to be an entry level employee upon completion of designated programs.

### **Acquiring Industry Knowledge**

Students successfully completing the program will understand:

- Basic principles and fundamentals of electricity along with equipment safety
- Components of accessory terminations and schematics including symbols and wiring, as well as identifying electrical blueprint symbols.
- How to identify materials and components of circuitry, demonstrate principles of electricity by calculating number of outlets, and employ fundamentals of electricity when creating a schematic and/wiring diagram.
- How to employ calculations identified in the National Electrical Code to class projects including calculations of branch load calculations, proper conductors, grounding, bonding and equipment bonding.
- How to relate fundamental concepts of wiring and installation to systems using cable and integrated systems wiring while applying wiring practices using communication, cable and integrated systems materials.

## **The Electrical Trades Industry**

### **Related Job Titles:**

- Electrical Helper
- Electrical Apprentice

**Job Outlook:** According to the U.S. Bureau of Labor Statistics, employment of electricians is expected to grow 20% from 2012 to 2022, faster than average for all occupations.

Residential, commercial and government buildings continue to need new, updated and additional wiring services, with a focus on alternative power generation. Greater efficiency and reliability of newer manufacturing plants is increasing the demand for electricians needed to install and maintain systems. Employment growth is dependent on government policy and changes in the economy.

**Median Wage:** The median annual wage for a fully-trained electrician is \$49,840. Apprentice starting pay is approximately 40% of a fully-trained electrician's annual salary. Wages vary and may increase. Wages vary based on the electrician's experience, skill level and industry of employment.

**Description of Work:** Under the supervision of experienced electricians, apprentices focus on accumulating on-the-job training while servicing residential and commercial sites. Work includes drilling holes, setting anchors and attaching conduit while cleaning work areas and maintaining equipment. Managing conduit and wiring installation is then followed by extensive training in order to create complete electrical system diagrams. Successful apprentices consistently work toward mastering all the main tasks of an electrician.

## **TRADES & INDUSTRY: Electrical**

### **Opportunities in the Building Trades Industry**

With increasing construction demands fueling the building trades industry, now is the best time to enhance your career and increase your earning potential with affordable professional training at FCC.

FCC's Building Trades program provides participants with expert knowledge, high-tech skills and hands-on experience at The Monroe Center, a state-of-the-art college training facility located within minutes of FCC's main campus.

Industry experts provide extensive, relevant instruction in classroom and fully-equipped labs. To best fit the needs of our students, both continuing education (noncredit) and academic (credit) training programs are available at FCC.

FCC's Electrical Program prepares students for entry-level positions and apprenticeships in the electrical trade. Most electricians learn their trade in a 4- or 5-year apprenticeship program, during which time, apprentices must complete at least 144 hours of technical training and 2,000 hours of paid on-the-job training annually. Several groups, including unions and contractor associations, sponsor apprenticeship programs.

### **Industry Certification and Licensure**

While electrician licensing requirements vary by state and locality, candidates must pass exams (*containing questions relating to national, state and local electrical codes*) to advance in the electrical trade industry. For more information, contact local and state electrical licensing boards.

**Data Sources:** Bureau of Labor Statistics: [www.bls.gov/ooh](http://www.bls.gov/ooh), Departments of Labor: [www.dol.gov](http://www.dol.gov) and [www.dli.state.md.us](http://www.dli.state.md.us)

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