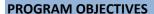
# **CONSTRUCTION ELECTRICIAN**



The Construction Electrician program at Eastern College, is designed to provide students with the high quality training necessary to start their career in the Construction Electrician trade. Students will have the opportunity to combine classroom learning with the application of the skills in a shop setting.

The objective of this program is to prepare students with the skills necessary to gain employment in their trade. Instruction provided by industry experts ensures a balance between classroom theory and shop application. This means you will read and study how to do a job and then actually apply the skills in a work-like setting.

Students will develop skills in hand and power tools, fundamental wiring practices, pipe bending, service entrances, basic trouble shooting, application of the Canadian Electrical Code and other skills used by Construction Electricians.

Students will complete an industry work term of four weeks as part of their program and will be evaluated by the journeyperson/mentor during the work term.

# **CAREER OPPORTUNITIES**

Graduates of the Construction Electrician program are entering the field at a time when industry demand is high. Graduates have opportunities in residential, commercial and industrial construction, oil and gas fields, alarm installation, pulp and paper industry, power generation and public utilities.

Following graduation from the program, those graduates who go on to complete apprenticeship and obtain a Certificate of Qualification with Red Seal can become project supervisors, project managers and even self-employed.



### **PREREQUISITES**

- High School Diploma or
- Mature student status or
- Adult High School Diploma or
- High School Equivalency (GED)

#### **GRADUATION REQUIREMENTS**

A student must obtain an overall grade, in each module of at least 70% in order to graduate and receive a diploma. A student must complete all requirements of the Student Success Strategies and Career Planning and Preparation modules as well as the field placement requirements.

## APPRENTICESHIP AND OCCUPATIONAL CERTIFICATION

Construction Electrician is an apprenticeship trade in New Brunswick and compulsory. This means that people working in the trade are required to be registered apprentices or holders of a Certificate of Qualification (CQ) in the Construction Electrician trade.

Graduates of this program may qualify for credit toward their apprenticeship upon registering as an apprentice with their trade employer and Apprenticeship and Occupational Certification, Government of New Brunswick. Graduates may also be eligible to challenge the apprenticeship level one exam and upon successful completion of that exam and meeting the on the job requirements for their trade will become second year apprentices.

Please visit the Federal Government web-site at: <a href="https://www.servicecanada.gc.ca/en/gov/apprenticeship.htm">www.servicecanada.gc.ca/en/gov/apprenticeship.htm</a>
I for information on how to receive a government of Canada Apprentice Incentive Grant (AIG) of \$1000.00 for completion of level one of apprenticeship (includes both exam and on the job requirements), and for information on how to receive another \$1000.00 grant for completion of level two of apprenticeship.

### **PROGRAM MODULES**

Student Success Strategies\*
Career Planning and Preparation I\*

Career Planning and Preparation II for Trades Software Lab: Computer Fundamentals\* Trade Documentation Fundamentals

Rigging, Lifting and Hoisting Procedures

Basic Mathematics Advanced Mathematics

Electrical Safety
Introduction to Code
General Code Rules
Composition of Matter

Meters

Current, Voltage and Resistance

Conductors

Splicing and Termination (Low Voltage)

Conductor Material and Sizes Series Resistive Circuits Parallel Resistive Circuits

Series-Parallel Resistive Circuits Work, Energy, Power and Efficiency Edison 3-Wire Distribution Systems

Wiring Methods

Methods of Producing EMF

Cells and Batteries

Magnetism & Electromagnetism

Generators Resistors

**Switching Circuits** 

Basic Circuits using Buzzers and Chimes

Relays and Controls Low Voltage Switching

Residential Alarm Systems and Smoke Alarms

**Fundamentals of Alternating Current** 

Intro to AC Circuits

Inductance and Inductive Reactance Capacitance and Capacitive Reactance

**Power Relationship** 

Introduction to Series AC Circuits

**Series RLC Circuits** 

Introduction to Parallel AC Circuits

Parallel RLC Circuits Power Factor Correction Three Phase Systems

**Transformers and Transformer Connections** 

Single Motor Control Class 1 and Class 2 Circuits

Service and Feeders and Branch Circuits

Lighting and Lighting Installation Installation of Electrical Equipment

Service Conductors Ampacity for a Single Dwelling

**Heating Cooling Controls** 

**Service Grounding Requirements** 

**Grounding and Bonding** 

Services and Service Equipment for a Single Dwelling Feeder and Branch Distribution Requirements for a

Single Dwelling

Service Ampacity for an Apartment/Similar Buildings

Grounding Requirements for a Single Dwelling

**Data Cabling** 

**Blueprint Reading Principles** 

Orthographic Projection / Diagrams

Dimensioning and Scaling / Print and Diagram

Nomenclature / Construction Drawings Print Reading / Applied Drawings

**HVAC** Rooftop Procedures

Introduction to Programmable Logic Controllers

Conduit, Tubing and Fittings Raceways, Wireways and Busways

CPR & First Aid/WHMIS

Exam Prep

**Fall Arrest Certification** 

Theory 560 hours
Practical 480 hours
Work Term 160 hours
Total Hours 1200 hours
Total Weeks 32 weeks

<sup>\*4</sup> hours/day, all other classes are full days.