INDUSTRIAL ELECTRICIAN

PROGRAM OBJECTIVES

The Industrial Electrician program at Eastern College, is designed to provide students with the high quality training necessary to start their career in the Industrial 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, application of the Canadian electrical code, fundamental wiring practices, pipe bending, service entrances, and troubleshooting; among other skills used by Industrial 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 Industrial Electrician program are entering the field at a time when industry demand is high. Graduates have opportunities in commercial and industrial operations as well as oil and gas business, alarm maintenance, 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 plant maintenance supervisors, project consultants 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

Industrial Electrician is an apprenticeship trade in New Brunswick and compulsory under the Electrical Inspection Act. This means that people working in the trade are required to be registered apprentices or holders of a Certificate of Qualification (CQ) in the Industrial 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 time requirements for their trade will become second year apprentices.

Please see the Federal Government web-site: www.servicecanada.gc.ca/en/gov/apprenticeship.html 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.

NOTE: In order to continuously improve our programs, Eastern College reserves the right to modify programs at any time. Program delivery order may vary depending on program start date. This diploma program may not be available at all campuses.

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**

*4 hours/day, all other classes are full days**.**

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