



## Construction Electrician – Upgrading Classroom A Guide to Course Content

*Construction Electricians install, repair, test and maintain wiring, controls, motors and other electrical devices in a variety of locations.*

**Training Requirements:** All candidates applying for upgrading training must be eligible to challenge the Interprovincial journey person examination.

This program is designed to prepare individuals to challenge the Construction Electrician Interprovincial Journey person examination.

Upgrading for apprentice construction electricians is designed to help apprentices learn and reinforce those skills needed to become competent journey person electricians.

\*In addition to the formal learning sections listed, a number of hours have been set aside during the course for self-directed learning time. This section could range from individual tutoring and practicing arithmetic and reading skills, to text or Code book research.

The information contained in this pamphlet serves as a guide for employers and apprentices.

The pamphlet briefly summarizes the training delivered in the upgrading program. The content of the technical training components is subject to change without notice.

### **Code Requirements and Trade Size Components**

- branch circuit layouts, calculations, trade size components
- balanced feeder layouts, calculations, trade size components
- unbalanced feeder layouts, calculations, trade size components
- service layouts, calculations, trade size components
- low voltage transformer layouts, calculations, trade size components

### **Electrical Fundamentals**

- series circuits, components, diagrams, analysis, calculations
- parallel circuits, components, diagrams, analysis, calculations
- delta circuits, components, diagrams, analysis, calculations
- star circuits, components, diagrams, analysis, calculations
- magnetic and electromagnetic operations, principles, terms, calculations
- cell and battery operation, principles, terms, calculations
- basic electronic circuits and components – dimmers, rectifiers,
- solid state switching devices, speed controls, timers, voltage regulators

### **Electric Motors and Motor Starters**

- motor principles
- motor types and operation
- motor characteristics
- motor component and connection diagrams
- motor starters and pilot devices

### **Wiring Circuits, Devices and Practices**

- common lighting and receptacle circuits, components, terms and installation standards
- residential and commercial lighting layouts, terms, calculations and installation standards
- conductor insulations, Imperial measuring methods, square and circular mil area calculations and conversions, allowable ampacity, common de-rating factors
- one-shot and segmental 90° conduit bending procedures, terms, calculations and installation standards
- wiring methods, terms, boxes, fittings, trade size for particular applications, installation standards

### **Preparing For and Writing Examinations**

- study techniques
- reading and comprehension
- understanding examination items
- examination strategies
- multiple choice examinations
- examination practice

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