



## 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 Construction Electrician Interprovincial Journeyperson examination.

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

Upgrading for apprentice Construction Electricians is designed to help apprentices learn and reinforce skills needed to become competent Journeyperson Electricians.

The upgrading program has a rigorous training schedule. Individuals must be able to manage a large volume of reading material in a short period of time. Completion of all assignments is integral to success.

As there is no practical component to the upgrading training program, additional study is recommended in areas where individuals have minimal on-the-job experience.

#### **Important Notes:**

Upgrading is available as a theory-only program. This program is eight-weeks of in-class training delivered by the training provider, Saskatchewan Polytechnic, available only at the campus in Moose Jaw.

Interested candidates must contact SATCC, not Saskatchewan Polytechnic, when applying for this program.

In addition to the formal learning sections listed, dedicated hours are set aside for self-directed study. During this time, individuals may engage in individual tutoring, practicing arithmetic and reading skills, and text or codebook research.

The document 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 and associated components
- Balanced feeder layouts, calculations and associated components
- Unbalanced feeder layouts, calculations and associated components
- Service layouts, calculations and associated components
- Low voltage transformer layouts, calculations and associated components

## **ELECTRICAL FUNDAMENTALS**

- Series circuits, components, diagrams, analysis and related calculations
- Parallel circuits, components, diagrams, analysis and related calculations
- Delta circuits, components, diagrams, analysis and related calculations
- Star circuits, components, diagrams, analysis and related calculations
- Magnetic and electromagnetic operations, principles, terms and related calculations
- Cell and battery operation, principles, terms and related calculations
- Basic electronic circuits and components – including dimmers, rectifiers, solid state switching devices, speed controls, timers and 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, and common de-rating factors
- One-shot and segmental 90 degree conduit bending procedures, terms, calculations and installation standards
- Wiring methods, terms, boxes, fittings, trade size for specific applications and installation standards
- Fire alarm circuits and heating controls

## **PREPARING FOR AND WRITING EXAMINATIONS**

- Study techniques
- Reading and comprehension
- Understanding examination items
- Examination strategies
- Multiple choice examinations
- Examination practice

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