Course Outline – Construction Electrician Journeyman (CCQ) *PREMIUM*

About the course

Learning Objectives

This online course aims to:

- Effectively prepare apprentice electricians for the requirements of the CCQ's Construction Electrician Journeyman (CCQ) qualification exam.
- Cover the main theoretical knowledge and technical skills likely to be assessed in the qualification examination.
- Review the essential technical topics of the construction electrician trade.

Target audience

This course is intended for apprentice construction electricians in Quebec who have completed their apprenticeship hours and received an invitation to the journeyman qualification exam of the Commission de la construction du Québec (CCQ). It is also suitable for any electrical worker wishing to review the essential concepts of the Quebec Construction Code – Chapter V, Electricity and electrical calculation practices.

Teaching method

The course is offered entirely online. The participant progresses independently and at his or her own pace on an interactive platform accessible at any time, **for a period of 100 days**. Each learning module includes a **focused theoretical lesson, which brings together all the essential information you need to master**, followed by multiple-choice questions with detailed explanations after each question. This immediate feedback allows you to understand mistakes, consolidate what you have learned and learn more effectively. This approach promotes self-learning and the progressive application of knowledge.

Achievement Requirements and Academic Integrity

Given the serious nature of the process and the importance of the competencies targeted, participants are asked to respect the integrity of the course and its evaluations. A minimum score of 60% is required for each quiz to demonstrate the acquisition of the concepts covered. Upon successful completion of the training, a **certificate of achievement will be given to the participants**.

Estimated time

Approximately **15 hours in total**, in a self-paced online format. This time includes the study of theoretical content and the completion of practice quizzes. Progress may vary depending on the learning pace of each participant.

Total number of chapters

The complete course has **32 chapters**. These chapters cover all the theoretical topics to be mastered and are organized by major technical themes (see details below).

Course content by topic

The course is organized around the following topics, presented in a clear and progressive way:

Electrical Basics

- Understanding Ohm's Law and the Law of Powers.
- Application of the fundamental formulas for the calculation of voltage, current, and power.

Basic electronics

- Operation of capacitors and inductors.
- Role and characteristics of batteries and accumulators.

Fire alarm and intrusion systems

- Principles of operation of fire alarm systems: circuit types, Classes A and B, applicable standards.
- Configuration of security zones and operation of intrusion alarm systems.

Conductors, cables and flexible cords

- Classification and characteristics of conductors.
- Current correction factors.
- Selection and installation of flexible cables and cords: clearance distances, overlap, and code compliance.

Electric motors

- Differences between direct current (DC) and alternating current (AC) motors.
- Calculations related to motors: speed, power, conductors and protections.
- Articles of the Electrical Code applicable to motors.
- Methods for starting and controlling motors.

Transformers

- Types and principles of operation of transformers.
- Connections and transformation reports.
- Calculations of primary and secondary currents, conductors, and protections.
- Electrical Code Standards applicable to transformers.

Receptacles and branch circuits

- Installation of receptacles in different types of buildings.
- Branch circuit rules, including voltage drop and electrical code requirements.

Electric heating

- Heating equipment and circuits.
- Power and current calculations required.
- Electrical Code Standards for Heating Installations.

Lighting

- Types of lighting equipment and their controls.
- Location of luminaires according to standards.
- Lighting calculations and electrical code requirements.

Cable Trays & Electrical conduits

- Types of conduit and cable trays.
- Conduit and enclosure fill calculations.
- Rules for sizing and installing conduits

Electrical services (Quebec)

- Service standards according to the Electrical Code.
- Calculation of loads and ampacity.
- Application of the rules of Hydro-Québec's "Blue Book".

PLCs and Control Logic

- Introduction to programmable logic controllers (PLCs).
- Basic principles of instrumentation and electrical logic.

Occupational health and safety

- Safe work procedures, including lockout practices.

Organization and structure of the course

The table below provides a summary of the structure of the course. It indicates the number of chapters and questionnaires for each major subject covered, as well as an estimate of the time to be devoted to each, according to the subject.

Training content by topic	Chapters	Quiz	Estimated time
Electrical basics	1	2	~1 h
Basic electronics	2	3	~0.5 h
Fire alarm and intrusion systems	2	3	~1 h
Conductors, cables and flexible cords	2	4	~1 h
Electric motors	5	7	~2 h
Transformers	4	6	~2.5 h
Receptacles and branch circuits	2	4	~1 h
Electric heating	1	3	~0.5 h
Lighting	1	5	~0.5 h
Electrical conduits and cable trays	3	3	~1 h
Connections (Quebec)	3	3	~2 h
PLCs, instrumentation and electrical logic	1	1	~1 h
Health, safety and work procedures	1	2	~0.5 h
Other (introductions, conclusions, etc.)	4	1	~0.5 h
Total	**32**	**47**	**15 h**