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Canadian Electrical Code Training - 2024 Edition Code Fundamentals and Calculations

View Course Details

COURSE DATES AND TIMES

March 11-18 , 2026
10:00 am - 4:30 pm ET
May 6-13 , 2026
10:00 am - 4:30 pm ET

Combined Course: 2024 CE Code Fundamentals AND CE Code Calculations

Our 12-hour instructor-led training course combines a full update on the 2024 CE Code changes, fundamentals, as well as practical, advanced calculation techniques. Stay compliant, improve safety, and master conductor sizing, conduit/box fill, motor/transformer calculations, grounding, and wiring best practices.

Designed for electricians, engineers, and maintenance professionals, the course delivers in-depth coverage — equipping you to design and install electrical systems that meet current safety and compliance standards.

This electrical code course aligns with the C22.1-24 edition of the Canadian Electrical Code and provides practical guidance for applying Canadian Electrical Code Part and CSA C22.1 requirements in real installations. It is especially valuable for those pursuing Field Safety Representative qualifications or meeting Technical Safety BC expectations, offering clear instruction on compliance, calculations, and safe electrical design practices across residential, commercial, and industrial systems.

Course #1 -

2024 CE Code - Changes and Fundamentals

- **January 14, 2026**
- **March 11, 2026**
- **May 6, 2026**

Our 6-hour, one-day 2024 CE Code Changes and Fundamentals course is a comprehensive, instructor-led training course designed to provide electrical professionals with a detailed understanding of the critical updates in the 2024 Canadian Electrical Code (CE Code). The course focuses on significant changes that impact safety, compliance, and installation practices in both residential, commercial and industrial settings.

Participants will explore updates in wiring and cable applications, conduit and box fill, grounding and bonding, hazardous locations, and protection systems. This course emphasizes practical application through real-world scenarios, and code search exercises, making it ideal for those looking to apply theoretical knowledge in their daily work.

The course is tailored to help professionals stay up to date with industry standards. By mastering the new CEC requirements, participants can ensure their electrical installations are safe, compliant, and efficient. Whether you are a seasoned electrical professional or a newcomer to the field, this course equips you with the tools and knowledge needed to navigate the latest changes effectively.

In addition to reviewing the technical changes in the Code, the course covers jurisdictional variations and the integration of new technologies. The curriculum is designed to be 70% experiential, enabling participants to engage in problem-solving exercises, hands-on applications, and real-world simulations, ensuring a deep and lasting understanding of the material.

Course #2 -

2024 CE Code Calculations: Practical Applications and Advanced Techniques

- **January 21, 2026**
- **March 18, 2026**
- **May 13, 2026**

This comprehensive 6-Hour, one-day, CE Code Calculations course focuses on critical electrical calculations essential for compliance with the 2024 Canadian Electrical Code (CEC). The course is designed for professionals who work with complex electrical installations, including electricians, engineers, and maintenance personnel. By attending, participants will gain expert knowledge in calculating conductor sizes, overcurrent protection, conduit and box fill, and motor applications—all while ensuring adherence to the latest CEC standards.

Why take this course? Electrical professionals face increasing demands to meet regulatory standards and ensure safety across diverse electrical systems. Miscalculations can lead to unsafe installations, costly rework, or project delays. This course equips you with the practical knowledge and hands-on experience to avoid those pitfalls and ensure compliance, helping to safeguard both workers and electrical systems. By mastering key calculation techniques, you can significantly reduce the risk of non-compliance and improve project

outcomes.

Participants will benefit from hands-on exercises, practical application scenarios, and real-world case studies, designed to make complex CE Code calculations clear and manageable. Whether you're calculating conductor ampacities, applying box and conduit fill rules, or determining overcurrent protection for transformers and motors, this course will equip you to excel. This is not just a review of the Code—it’s an immersive experience aimed at helping you implement calculations effectively in your day-to-day work.

Upon completion, students will be able to confidently apply CEC calculations in various contexts, improving their ability to troubleshoot, ensure safe installations, and stay compliant with evolving electrical standards.

2024 CE Code - Changes and Fundamentals

- Stay current with the latest CEC changes to enhance safety and compliance.
- Develop practical skills through immersive, hands-on learning.
- Ensure projects meet the latest Code standards to avoid non-compliance penalties.

2024 CE Code Calculations: Practical Applications and Advanced Techniques

- Develop hands-on skills with electrical calculations critical for Code compliance.
- Stay up to date with the latest CE Code changes to avoid costly non-compliance.
- Improve the ability to troubleshoot and ensure safety in electrical systems.
- Enhance your knowledge and career potential by mastering complex CE Code regulations for real-world applications.

Learning Outcomes

- Identify and apply the key updates in the 2024 Canadian Electrical Code and understand their impact on safe, compliant installations.
- Navigate the CE Code efficiently and interpret rules for wiring, grounding, bonding, protection, and hazardous locations.
- Perform essential CE Code calculations, including conductor sizing, ampacity adjustments, box and conduit fill, and overcurrent protection.
- Apply motor, transformer, and feeder calculation methods using updated CEC tables and rules.
- Solve real-world installation challenges through scenario-based exercises that strengthen compliance, troubleshooting, and practical field application.

WHO SHOULD ATTEND

- Electricians (industrial, commercial, and residential)

- Electrical engineers, inspectors, and contractors
- Utility managers, maintenance professionals, and project managers
- Electrical apprentices and educators
- Professionals responsible for design, installation, and electrical system safety

STUDENTS RECEIVE

- 2024 CE Code Training Certificate of Course Completion
- 1.2 CEU credits issued by the Engineering Institute of Canada. (12 Professional Development Hours)
- An **Electricity Forum Coupon (Value $100)** to be used against any future Electricity Forum event (restrictions apply)
- 100+Page Digital Electrical Safety Handbook (Value $20)
- Course Materials in PDF Format

COURSE OUTLINE

CE Code Compliance Training Course Outline

DAY ONE

Welcome and Introduction

- Overview of course objectives and the significance of the 2024 CE Code changes.
- Participant handout to share personal learning goals.

Review - Major Changes - 2024 CE Code

- Structure and organization of the CEC and key related standards.
- Highlight changes in 2024 – 26th edition of the CE Code.
- Navigating the CE Code to locate specific sections and standards.

Tools for Navigating the CE Code

- Strategies for using the Code effectively.
- Hands-on Activity: Code navigation exercises

Wire and Cable Applications

- Understanding termination temperatures, ampacities, and wire/cable specifications.
- Conditions of use for various conductors and cables.
- Hands-on Activity: Wiring exercises and ampacity calculations.

Conduit Fill and Box Fill

- Code requirements for calculating conduit and box fill.
- Hands on Activity: Performing conduit and box fill calculations.

Hazardous Locations

- Classification systems for hazardous locations, including Zone and Class/Division.
- Identifying and classifying hazardous locations and selecting wiring methods.

Grounding and Bonding

- Review of system grounding, service equipment grounding, and bonding methods.

Learning Outcomes:

- Understand the structure and key updates in the 2024 CE Code.
- Apply new safety requirements for installations in industrial and hazardous environments.
- Perform accurate conductor sizing, load calculations, and grounding.
- Navigate and apply the Code effectively to real-world scenarios.

DAY TWO

CE Code Calculations: Practical Applications and Advanced Techniques

Course Program Outline:

1. Introduction and Overview

- Overview of course objectives and key concepts for CE Code compliance.
- Introduction to common calculation methods used in electrical installations.

2. Wire and Cable Applications

- Key factors for wire and cable conditions, including ampacities, temperature ratings, and flame spread.
- Hands-on Exercise: Conductor ampacity calculation and table navigation.
- Review of parallel conductors, underground wiring, and mitigating sheath/eddy currents.

3. Conduit Fill and Box Fill

- Detailed calculation procedures for conduit and box fill according to Code requirements.
- **Student Exercise**: Practical conduit and box fill calculations using real-world examples.

4. Hazardous Locations

- Understanding the Zone and Class/Division systems for hazardous locations.
- **Student Exercise**: Electrical wiring requirements and equipment considerations for hazardous areas.

5. Panelboard Applications

- Identifying different types of panelboards and determining feeder connections based on the Code.
- **Student Exercise**: Conduct calculations for conductor sizing and overcurrent protection in panelboards.

6. Transformer Applications

- In-depth coverage of conductor and overcurrent sizing for transformers.
- **Student Exercise**: Real-world transformer sizing calculations based on applicable Code sections.

7. Motor Applications

- Understanding motor protection, including conductor sizing, overcurrent, and disconnection requirements.
- **Student Exercise**: Perform calculations for motor conductor sizing, overload, and overcurrent protection.

8. Electric Welders Tap Conductors

- Applicable Code sections for electric welders and tap conductors in electrical systems.
- **Student Exercise**: Conduct sizing and overcurrent calculations for tap conductors and electric welders.

9. Tap Conductors

- Panelboards
- Transformers
- Motors

Questions and Answers

COURSE SCHEDULE:

Both days:

Start: 10 a.m. Eastern Time
Finish: 4:30 p.m. Eastern Time