Electrical Safety Authority

Training Solutions
COURSE CATALOGUE

REGISTER NOW!

Lifelong Learning is Lifelong Safety

Version 01 – ©Electrical Safety Authority 2023

A Message from our Director

Welcome to the Electrical Safety Authority (ESA) Training Solutions' Course Catalogue. We are delighted to present a comprehensive array of courses designed to empower you with the skills and expertise to remain at the forefront of emerging trends and maintain a current understanding of the ever-evolving landscape of electrical safety.

At ESA Training Solutions, our educational approach is driven by our commitment to lifelong learning and lifelong safety. We believe that learning should be more than a passive experience – it should be dynamic, engaging, and interactive. That's why we have curated a learning environment that fosters a practice of active participation, practical application, and critical thinking.

Whether you are a motivated professional looking to grow in your current position, an individual diligently pursuing the Master Electrician designation, or a proactive business leader aiming to strengthen safe electrical practices within your organization, our team of experts is committed to helping you accomplish your career and business goals.

Among many other benefits, ESA Training Solutions' courses will offer you unparalleled industry-leading technical expertise coupled with invaluable field experience:

- The development of our course content is entrusted to industry-leading technical experts; the time invested and the knowledge you gain is compliant with the latest advancements and best practices in electrical safety.
- Our team of trainers brings a wealth of field experience and expertise to the table. ESA conducts nearly half a million electrical inspections a year. A course taught through ESA Training Solutions will enable you to gain practical insights beyond theory.

On behalf of the entire ESA Training Solutions team, I extend my sincerest appreciation for choosing us as your partner in your educational journey. We are dedicated to supporting you at every step and look forward to witnessing your growth and success.

We wish you a transformative and enriching learning experience!

Sincerely,

Soussanna S. Karas
Director, Licensing and Training

A Message from one of our Accomplished Trainers

As a seasoned trainer with countless courses under my belt, there is one sentiment that echoes more than others – the sheer satisfaction derived from the success and growth of our learners. It brings me immense joy to witness the appreciation reflected in the eyes and smiles of our participants, as well as receiving expressions of gratitude for attending one of our highly acclaimed courses.

Pursuing learning from the start of your career through to the end is critical for professional growth and safety outcomes. A successful apprenticeship places formal educational training at its core, establishing the foundation for a remarkable career. Without a doubt, lifelong learning for Master Electricians, Licensed Electrical Contractors, and other professionals in the electrical industry is also essential, given the numerous safety decisions and responsibilities they are entrusted with.

As you browse this catalogue, know that each course brings us closer to our goal of empowering individuals and setting the stage for safe work practices and impactful careers in their chosen industry. Embedded in each course is our commitment to preparing you to meet all challenges head-on. We look forward to embarking on this journey of learning with you.

With thanks,

Damiano Calderari
Electrical Safety Inspector & Trainer

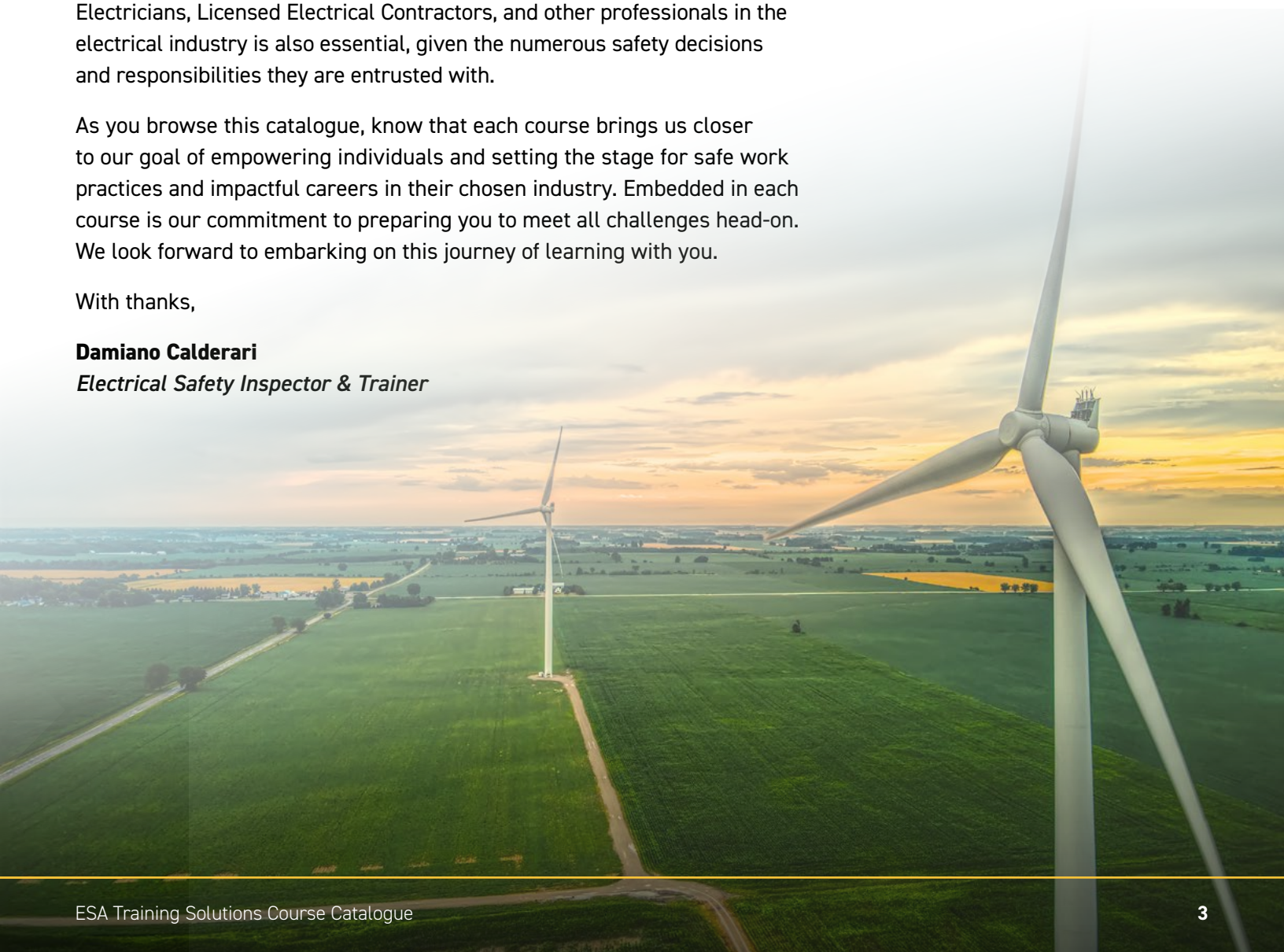
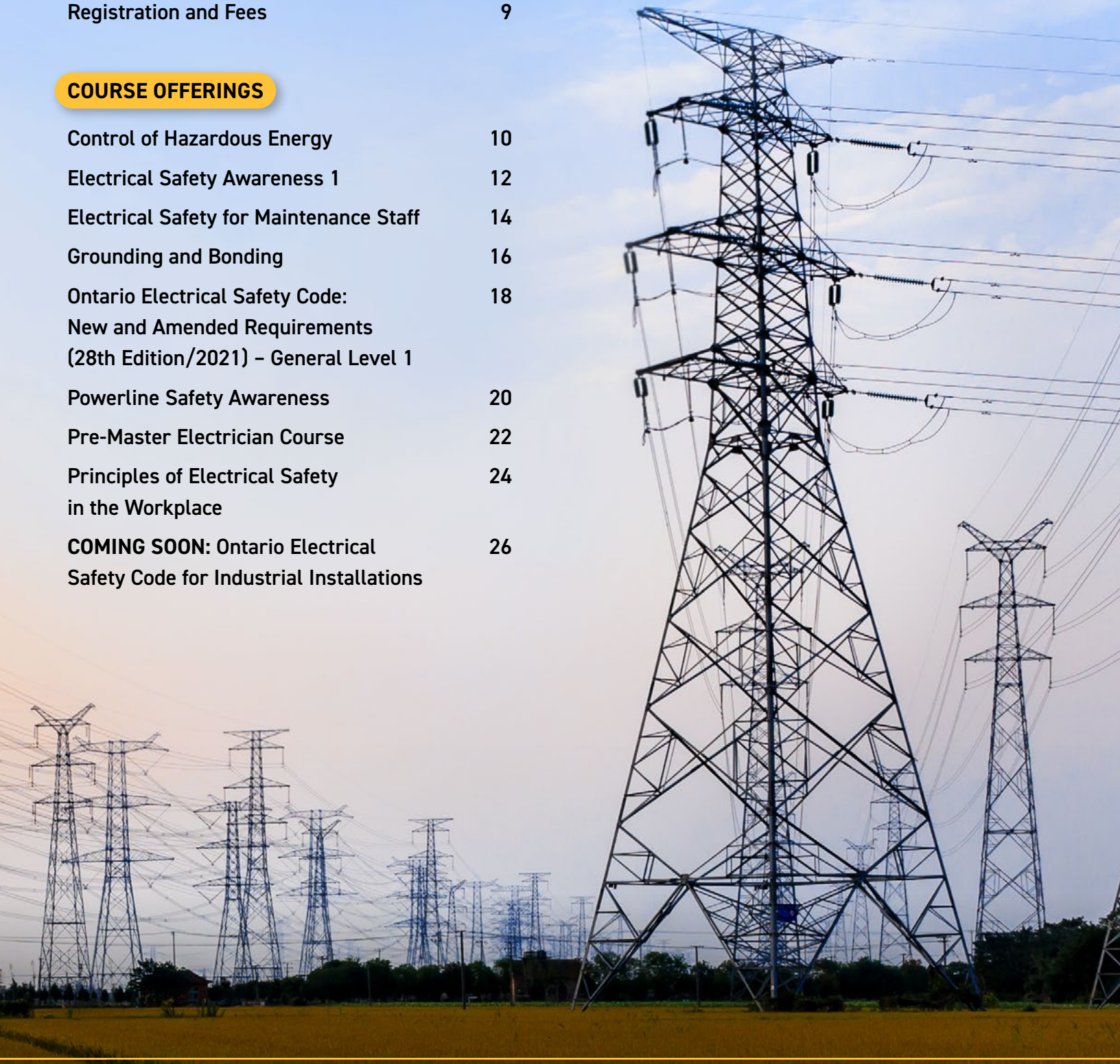


Table of Contents



About ESA Training Solutions

Who We Are

The Electrical Safety Authority (ESA) is a Delegated Administrative Authority for the Province of Ontario that regulates and promotes electrical safety in Ontario. A critical part of ESA's mandate involves education and training to enhance public electrical safety.

Training is a **non-regulatory service** offered by the Electrical Safety Authority (ESA).

ESA Training Solutions offers electrical safety and technical courses based on standards and regulations such as the Ontario Electrical Safety Code (OESC), Ontario's *Occupational Health & Safety Act* (OH&SA), and CSA Z462 Workplace Electrical Safety Standard, among others. Our in-depth understanding of electrical systems, installations, and the associated hazards enables us to develop comprehensive training programs that promote safe work practices.

Recognizing the complex nature of the electrical industry, we leverage our hands-on experience in the field to enhance electrical safety and education through our courses.

Why Choose ESA Training Solutions

Our Commitment

ESA Training Solutions is committed to promoting electrical safety by providing an engaging learning environment. Whether you are looking to advance in your current role, achieve the Master Electrician designation, or enhance safe electrical practices in your organization, our team of experts can help you achieve your career and business objectives.

Award-winning courses

Cutting-edge course design and learning platforms

Flexible course delivery options to fit every schedule

Accomplished trainers with extensive field experience

Industry-leading technical course developers

Course Delivery Methods

An Option for Every Learner

ESA Training Solutions offers multiple course delivery methods to suit your individual learning preferences:

ONLINE

This flexible option allows you to review course materials at your own pace. Our online courses feature a dynamic and interactive multimedia experience, including module review exercises, readings, and supplemental resources.

NEW

Try a free online course demo today!

IN-PERSON

Learn directly from our highly skilled trainers, who are subject matter experts with extensive field experience. Our in-person courses provide an engaging learning experience that allows you to interact with fellow learners and receive immediate instruction and feedback.

VIRTUAL INSTRUCTOR-LED (ViLT)

Engage in real-time learning with one of our expert trainers from the comfort of your own home or office. Our ViLT courses are conducted through video conferencing, eliminating the need for travel while still providing a participatory learning experience.

Registration and Fees

Registration Information

At ESA Training Solutions, we offer convenient online course registration through our **Online Registration Portal**, accessible anytime and anywhere. To access it, simply visit the **Safety & Technical Training** section of our website or scan the QR code below using your smartphone or tablet.

For large groups, private group training rates are available upon request, ensuring that everyone in your organization can benefit from our expert training.

If you require assistance with course registration, our friendly and knowledgeable ESA Customer Service Representatives are available to help. Simply call us at **1-877-372-7233** to speak with a representative today.

REGISTER NOW!

Course Fees

Scan the QR Code or visit the **Terms and Fees** section of our website for easy access to our full list of courses and pricing details.

Control of Hazardous Energy

METHODS OF DELIVERY

Online | In-person | Virtual

COURSE LENGTH

Online: 21-day access
In-person: Half-day (4 hours)
Virtual Instructor-led: Half-day (4 hours)

CEU Accreditation: MECP 0.4

About This Course

Enroll in our Control of Hazardous Energy course and learn how to keep you and your colleagues safe in the workplace. During this four-hour course, you will learn about the need for and the procedures required to control hazardous energy.

By the end of the course, you will be equipped with the knowledge necessary to recognize and control hazardous energy sources, helping to prevent injuries and promote a safe working environment. You will also be able to identify the different types of hazardous energy encountered in the workplace, including electrical, mechanical, and chemical sources.

Whether you are an experienced worker or new to the industry, Control of Hazardous Energy is essential for anyone who wants to work safely with hazardous energy sources.

Topics Include:

- The case for safe work practices and planning
- Regulations and standards
- Hazard identification and risk assessment
- Procedures for controlling hazardous energy

Control of Hazardous Energy (continued)

This course is ideal for:

- Workers who operate or maintain machinery or equipment that can generate hazardous energy, such as electricians, millwrights, technicians and technologists, mechanics, HVAC technicians, gas fitters, and machine operators
- Health and safety professionals who are responsible for developing and implementing policies and procedures related to hazardous energy control
- Supervisors and managers who are responsible for ensuring that their employees work safely around hazardous energy sources
- Engineers and designers responsible for creating or modifying machinery or equipment that can generate hazardous energy
- Maintenance and repair personnel who work on equipment that has been locked out or tagged out

> **“I found this particular course excellent.**
>
> **— Keith T.**

> **“Instructor was very good, course was very helpful.**
>
> **— Joel J.**

Electrical Safety Awareness 1

METHODS OF DELIVERY

In-person

Virtual

COURSE LENGTH

In-person: Half-day (4 hours)
Virtual Instructor-led: Half-day (4 hours)

CEU Accreditation: MECP 0.4

About This Course

Join our Electrical Safety Awareness 1 course and learn how to stay safe when working with electricity. This four-hour course will teach you how to identify and manage electrical shock hazards, including mitigation strategies to keep you and your colleagues safe.

Our expert trainers will guide you through basic electrical terminology and teach you how to identify and avoid common electrical hazards that can cause serious injuries or even death. By the end of the course, you will be able to determine how electrical shocks occur and how to prevent them from happening.

Whether you are an experienced electrician or new to the industry, Electrical Safety Awareness 1 is an essential course for anyone working with, or in proximity to, electricity. Prioritize your safety and the safety of those around you – enroll today.

Topics Include:

- Strategies to manage electrical hazards
- How to report serious electrical incidents
- Effects of electrical shock and arc flash
- Ontario Electrical Safety Code (OESC) rules
- Electrical product approval requirements

Electrical Safety Awareness 1 (continued)

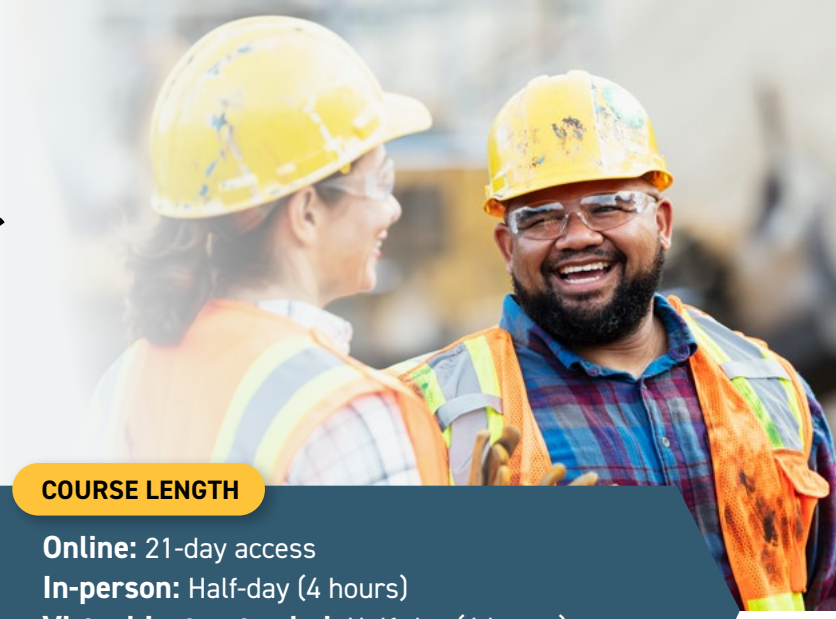
This course is ideal for:

- Those working with electricity, such as electricians, electrical apprentices, electrical engineers, and electrical technicians
- Maintenance staff, machine operators, and facility managers who work with or in proximity to electrical equipment
- Workers in industries such as construction, manufacturing, and mining, where electrical hazards are common
- Safety professionals, managers, and supervisors responsible for electrical safety in the workplace
- Those studying or instructing trades involving electricity, including high school and college students, as well as educators

> **Very informative and clear, answered all questions clearly, delivered information clearly.**
>
> — Corey D.

> **This was fantastic. I was looking forward to this training, and the instructor did not disappoint.**
>
> — Grant F.

Electrical Safety for Maintenance Staff



METHODS OF DELIVERY

Online | In-person | Virtual

COURSE LENGTH

Online: 21-day access
In-person: Half-day (4 hours)
Virtual Instructor-led: Half-day (4 hours)

CEU Accreditation: MECP 0.4

About This Course

The Electrical Safety for Maintenance Staff course is designed for those who want to enhance their safety knowledge when working with electricity. This four-hour course explains the fundamentals of electricity and electrical terminology used in a maintenance environment. The course also covers the identification of electrical hazards and proven methods to mitigate them.

This course will guide learners through the dangers of electricity and the consequences of not working safely. Participants will also learn how to promote electrical safety in the workplace, increasing awareness and reducing potential risks related to electrical harms.

This course is valuable to anyone working in a maintenance environment. Learn to identify and avoid potential electrical hazards – enroll today.

Topics Include:

- Physical effects of electrical shock
- Creating a safe work environment
- Recognizing and controlling the dangers of electricity
- Real-life examples of electrical incidents
- Safety information resources

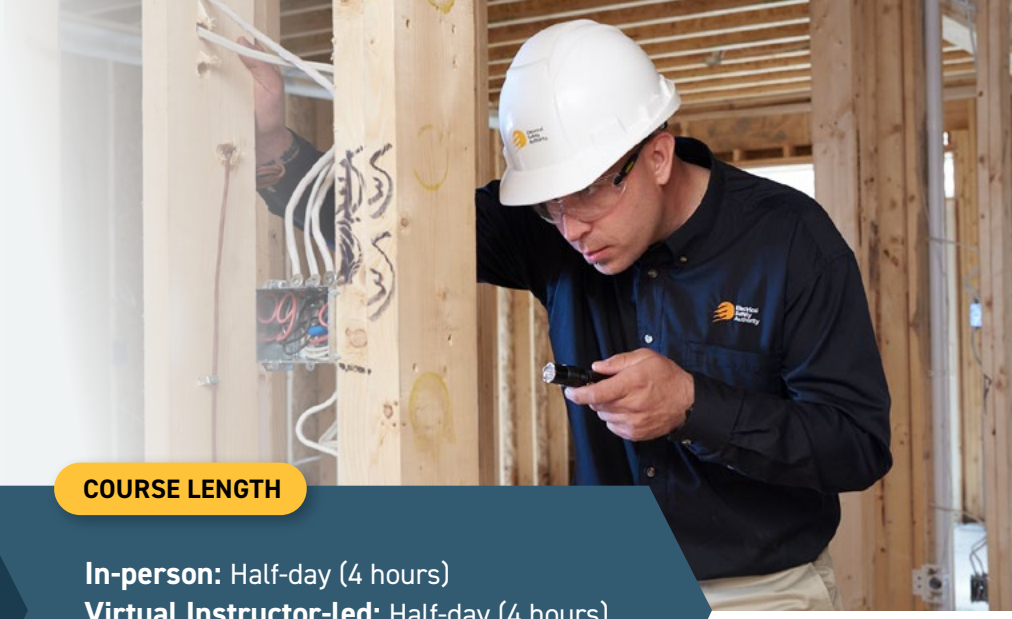
Electrical Safety for Maintenance Staff (continued)

This course is ideal for:

- Workers who operate, maintain, or work in proximity to electrical equipment, such as maintenance staff, custodial staff, and HVAC technicians
- Facility managers responsible for the safety of maintenance staff
- Safety professionals, managers, and supervisors responsible for electrical safety in maintenance settings
- Anyone working in a maintenance environment who wants to enhance their electrical safety knowledge where electrical hazards are present

> **The course was very informative. I enjoyed the presentation. It was also interactive.**
>
> — Rabin B.

Grounding and Bonding



METHODS OF DELIVERY

In-person

Virtual

COURSE LENGTH

In-person: Half-day (4 hours)
Virtual Instructor-led: Half-day (4 hours)

CEU Accreditation: MECP 0.4

About This Course

This four-hour Grounding and Bonding course is designed to provide learners with a thorough understanding of the grounding and bonding requirements set out in the Ontario Electrical Safety Code (OESC). Participants will learn about the principles of grounding and bonding, the requirements outlined in Section 10 of the Code, and supplemental and amendatory sections and rules.

Learners will explore grounding and bonding requirements in different electrical installations through theoretical learning and practical examples. The course also covers safety considerations involved in grounding and bonding, including risk assessment and hazard management.

Upon completion of this course, participants will be able to effectively apply grounding and bonding principles in their work and contribute to the overall safety of electrical systems.

Topics Include:

- Grounding and bonding definitions and theory
- Solidly grounded systems
- Impedance grounded systems
- Equipment bonding
- Equipotential bonding

Grounding and Bonding

(continued)

This course is ideal for:

- Those working with electricity, such as electricians and electrical apprentices, who want to expand their knowledge of the Ontario Electrical Safety Code (OESC) requirements related to grounding and bonding
- Electrical engineers, technicians, and technologists who are responsible for designing and ensuring compliance with grounding and bonding systems
- Maintenance personnel who are responsible for maintaining electrical systems and equipment
- Building and construction professionals who need to ensure compliance with grounding and bonding requirements during the construction or renovation of a building
- Facility managers with an electrical or technical background who are responsible for ensuring the safe and efficient operation of electrical systems in their buildings

> **Knowledgeable teacher and great refresher!**
>
> **— Kelsey D.**

Ontario Electrical Safety Code: New and Amended Requirements (28th Edition/2021) – General Level 1

METHODS OF DELIVERY

Online | In-person | Virtual

COURSE LENGTH

Online: 21-day access
In-person: Half-day (4 hours)
Virtual Instructor-led: Half-day (4 hours)

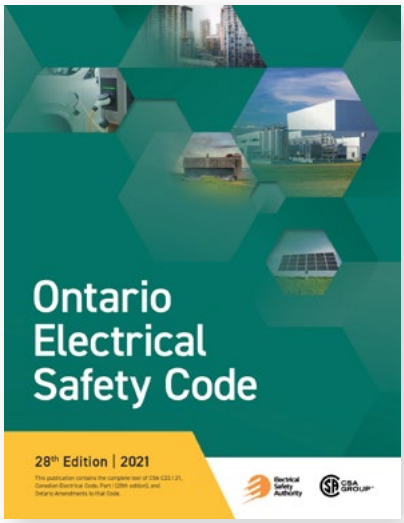
CEU Accreditation: MECP 0.4

About This Course

The Ontario Electrical Safety Code: New and Amended Requirements (28th Edition/2021) – General Level 1 course provides learners a comprehensive overview of the latest Code requirements for residential, commercial, industrial, and agricultural installations.

This four-hour course will explain the new and amended requirements of the 2021 Ontario Electrical Safety Code (OESC), including practical examples involving the design and installation of electrical equipment.

Stay up-to-date with the knowledge needed to complete safe, Code-compliant installations – enroll today!



Topics Include:

- New and amended requirements of the Ontario Electrical Safety Code (OESC), including Sections 2, 4, 6, 8, 10, 12, 14, 20, 22, 24, 26, 30, 42, 62, 64, 68, 75, and 86.

Ontario Electrical Safety Code: New and Amended Requirements (28th Edition/2021) – General Level 1 (continued)

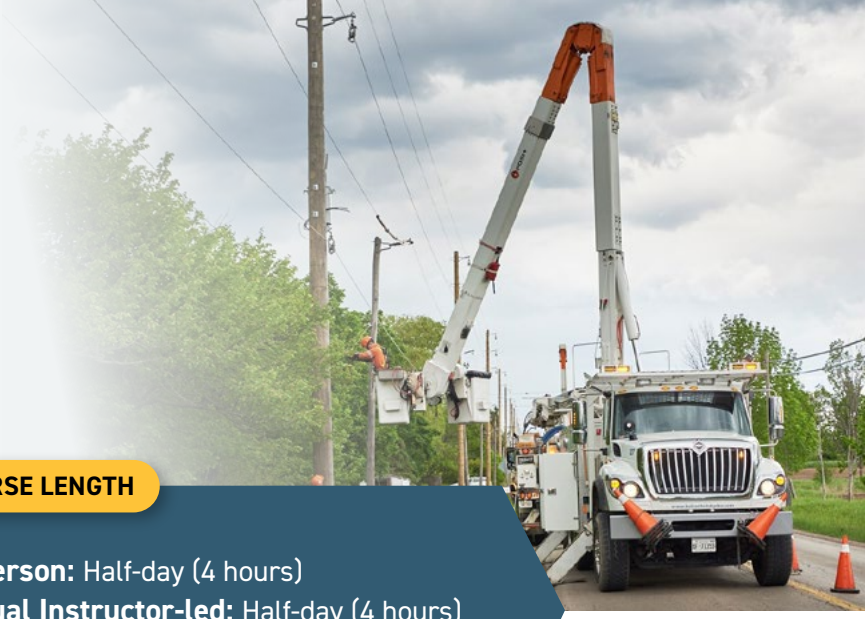
This course is ideal for:

- Electricians who want to stay up-to-date with the knowledge needed to complete safe, Code-compliant installations
- Electrical apprentices who want to learn the latest Code requirements and build a strong foundation for their careers in the electrical industry
- Master Electricians and management personnel who are responsible for overseeing electrical work and ensuring compliance with the latest Code requirements
- Electrical contractors who want to limit the potential for defects
- Engineers, designers, and maintenance personnel who are responsible for electrical systems and equipment
- Supervisors and managers with a technical background who want a comprehensive overview of the new and amended requirements of the 2021 Ontario Electrical Safety Code (OESC) and ensure compliance in their workplace

> **The course material was taught effectively by the instructor, and I found the information beneficial to my continuing education. The instructor did a terrific job teaching us. Thank you!**
>
> — Tyler S.

> **Well run and organized course.**
>
> — Scott H.

Powerline Safety Awareness



METHODS OF DELIVERY

In-person

Virtual

COURSE LENGTH

In-person: Half-day (4 hours)
Virtual Instructor-led: Half-day (4 hours)

CEU Accreditation: MECP 0.4

About This Course

Our Powerline Safety Awareness course is designed to equip you with the knowledge required to stay safe when working near powerlines. In this four-hour course, you will learn how to identify potential hazards when working around electrical transmission and distribution systems.

Our expert trainers will guide you through the fundamentals of powerline safety, including what to do when a person or equipment comes into contact with a powerline and how to prevent contacts from occurring. By the end of the course, you will be able to confidently identify potential hazards and implement safe work practices when working around powerlines.

Whether you are an experienced worker or new to the industry, Powerline Safety Awareness is essential for everyone who wants to work safely around powerlines – enroll today!

Topics Include:

- Safe work practices for working near powerlines
- Powerline incidents statistics
- The electrical distribution system
- Ground gradients
- Ontario's *Occupational Health & Safety Act* (OH&SA)

Powerline Safety Awareness (continued)

This course is ideal for:

- Heavy equipment operators such as mobile cranes, concrete boom pump trucks, boom trucks, tractor-trailers, dump truck operators, and asphalt paving and stone slingers contractors (and operators of similar equipment)
- Construction crews who work on or near buildings and structures that are close to powerlines
- Road work crews that work near powerlines while carrying out their duties
- Other professions that work near powerlines such as landscapers, arborists, roofers, sign installers, eavestrough installers, pool installers, and event tent installers
- Agricultural workers who may work near powerlines when carrying out farming operations
- Municipal or regional workers and staff maintaining their infrastructure
- Those studying or instructing trades involving electricity, including high school and college students, as well as educators
- First responders who are called to emergencies that involve electrical systems such as downed powerlines

Did you know? You don't have to touch a powerline to be shocked by it. Electricity can jump or arc to a person or equipment. Anyone working at heights or operating heavy equipment is at an increased risk of coming into contact with powerlines.

This course is ideal for anyone who works in industries or professions where there is a risk of coming into contact with powerlines. It is also recommended for those who want to enhance their knowledge of powerline safety to ensure they work safely near powerlines.

> **This course would be a benefit for all adults, working or stay at home!**
>
> — Rob V.

Pre-Master Electrician Course

METHODS OF DELIVERY

Online

In-person

COURSE LENGTH

Online: 90-day access
In-person: Six days
(8 hours of instruction per day)

CEU Accreditation: N/A

About This Course

Our Pre-Master Electrician Course is designed to equip Certified Electricians, Professional Engineers (P.Eng), Certified Engineering Technologists (CETs), and Certified Technicians (C-Techs) with the knowledge and skills required to become successful Master Electricians.

In this comprehensive 48-hour course, you will gain insight into both technical and safety topics that are essential to writing the Master Electrician exam. Our expert trainers will guide you through a range of subjects, including electrical theory, electrical codes and standards, electrical equipment and systems, health and safety, business standards, and communication and leadership skills.

Join us and take the first step toward achieving your career goals – enroll today!

Topics Include:

- Ontario Electrical Safety Report
- Ontario Electrical Safety Code rules that govern residential, commercial, industrial, and high-voltage installations
- Licensing and legal obligations under the *Electricity Act*
- Duties and responsibilities under Ontario's *Occupational Health & Safety Act* (OH&SA)
- Overview of the Human Rights Code, *Labour Relations Act, Employment Standards and Construction Act*, and other relevant legislation

Recommendation

Prior to commencing the course, you are encouraged to confirm you are eligible for an ECRA/ESA Master Electrician License. This course is not a prerequisite to write the Master Electrician Examination.

Visit ESA's Contractor Page for the complete **list of requirements and Step-By-Step Application Process**.

Pre-Master Electrician Course (continued)

This course is ideal for:

- Certified Electricians and Registered Professional Engineers who want to enhance their understanding of electrical systems and gain insight into the technical and non-technical topics covered in the Master Electrician exam
- Certified Engineering Technologists, Certified Engineering Technicians, and Certified Powerline Technicians who want to advance their knowledge and skills in the electrical industry and prepare to become a Master Electrician

This course is suitable for all eligible individuals planning to become a Master Electrician. Whether you are a Certified Electrician, a Professional Engineer, a Certified Engineering Technologist, a Certified Engineering Technician, or a Certified Powerline Technician, this course will provide you with the knowledge and skills you need to take the next step in your career.

Please note that each applicant for a Master Electrician license must meet the requirements of the *Electricity Act*, 1998 (the Act) and Ontario Regulation 570/05 (Licensing Regulation). These requirements include having at least three years' experience in the electrical trade:

- Practicing the trade of electrician – construction and maintenance; electrician – domestic and rural or industrial electrician under a valid Certificate of Qualification;
- Practicing the trade of powerline technician under a valid Certificate of Qualification;
- Working for an electrical contractor as a licensed P.Eng. registered with the Professional Engineers Ontario (PEO); or
- Working for an electrical contractor as a Certified Engineering Technologist or Certified Engineering Technician registered with the Ontario Association of Certified Engineering Technicians & Technologists (OACETT).

> **Excellent OESC content, review, and practice. The in-person group setting and enthusiastic instructor led to an excellent increase in comprehension, learning, and an enjoyable training experience.**
>
> **— Mitchell G.**

Principles of Electrical Safety in the Workplace

METHODS OF DELIVERY

Online | In-person | Virtual

COURSE LENGTH

Online: 21-day access
In-person: Half-day (4 hours)
Virtual Instructor-led: Half-day (4 hours)

CEU Accreditation: MECP 0.4

About This Course

Our Principles of Electrical Safety in the Workplace course is designed to equip you with the knowledge and skills needed to promote workplace electrical safety based on the principles contained in the CSA Z462 Workplace Electrical Safety Standard.

In this four-hour course, you will learn the importance of assessing and planning for safety in the workplace, and you will be guided through planning and assessment approaches to establish workplace electrical safety. You will also learn how to act beyond complacency in work habits, inform others of safe work practices, and promote a culture of higher safety awareness in the workplace.

By the end of the course, you will be able to confidently apply the principles of CSA Z462 to promote workplace electrical safety and protect workers from electrical hazards. Whether you are an employer or an employee, this course is an essential step toward creating a safer work environment – enroll today!

Topics Include:

- Electrically safe workplaces
- Safe work planning (equipment labelling, PPE selection, and working distance)
- Hazard identification
- Risk assessment
- Hazard elimination and risk control

Principles of Electrical Safety in the Workplace (continued)

This course is ideal for:

- Electricians and electrical engineers who want to expand their knowledge and skills related to electrical safety in the workplace
- Maintenance personnel who want to ensure they are working safely and in alignment with the principles contained in CSA Z462
- Supervisors and managers who want to enhance their understanding of workplace electrical safety and ensure their workers are protected from electrical hazards
- Health and safety professionals who want to promote a culture of safety in their organization and develop effective safety programs

This course is ideal for anyone who works in an industry or profession where there is a risk of electrical hazards in the workplace. Whether you are an electrician, an electrical engineer, maintenance personnel, a supervisor, or a health and safety professional, this course will provide you with the knowledge and skills you need to promote workplace electrical safety and protect the well-being of workers.

> **This knowledge is good to have and sharing it with everyone will save lives.**
>
> — Anand T.

> **Excellent instructor good real-life stories, and an engaged class.**
>
> — Anonymous

Ontario Electrical Safety Code for Industrial Installations

COMING SOON

METHOD OF DELIVERY

In-person

COURSE LENGTH

In-person: Two days (8 hours per day)

CEU Accreditation: TBD/Pending

About This Course

Our Ontario Electrical Safety Code for Industrial Installations course is designed to provide you with an in-depth understanding of the Ontario Electrical Safety Code (OESC) requirements specific to industrial installations.

In this 16-hour course, you will discover how wiring methods and installation requirements can impact design practice and considerations. On day one, our expert trainers will offer an overview of the OESC structure and general Code rules, as well as requirements for conductor ampacities, circuit loading, key considerations regarding grounding and bonding, protection and control, and wiring methods.

On day two of the course, learners will review requirements for capacitors and transformers, motors, welders, fire pumps, and high-voltage installations, as well as hazardous location installation awareness. By the end of the course, you will have a comprehensive understanding of the OESC requirements for industrial installations and how to apply them to your work.

Join us and take the first step towards developing a comprehensive understanding of the OESC requirements for industrial installations – enroll today!

Topics Include:

- Circuit loading and demand factors
- Conductors
- Grounding and bonding
- Wiring methods
- Transformers
- Motors
- Hazardous locations awareness
- High-voltage installations

Ontario Electrical Safety Code for Industrial Installations (continued)

This course is ideal for:

- Electricians who want to expand their knowledge related to the OESC requirements for industrial installations
- Electrical Contractors working in industrial settings who want to ensure their work complies with the OESC
- Electrical apprentices who want to gain a comprehensive understanding of the OESC requirements specific to industrial settings
- Electrical engineers, technicians, and technologists who want to enhance their understanding of the OESC requirements and apply them to their work in industrial settings

This course is ideal for anyone who works in an industry or profession where there is a need for a comprehensive understanding of the OESC requirements for industrial installations. Whether you are an experienced worker or new to working in industrial settings, this course will provide you with the knowledge you need to ensure your work is in compliance with the OESC.

Subscribe to ESA Training Solutions' e-mail communications!

Be the first to know about upcoming course launches, new offerings, discounts, and valuable resources from ESA Training Solutions.

Scan the QR Code or visit our website to subscribe.

Electrical Safety Authority

Lifelong Learning is Lifelong Safety

REGISTER NOW!