ECT
Engineering College of Technology.

Mastering Electrical Safety: Practical Lessons in Earthing and Lightning Protection

Watch Webinar Recording Here

Wednesday, 28 October 2026| Technical Webinar

Naser Hashemnia

EIT Lecturer



UKPRN: 10089771

About ECT

We are dedicated to ensuring that you receive a world-class education and gain skills that you can immediately apply in the workforce.



Engineering Specialists

ECT - affiliated to the well-established Engineering Institute of Technology (EIT) - is an engineering education specialist. ECT delivers bachelor's and master's degrees.



Industry-Driven programmes

Our programmes are designed by industry experts, ensuring you graduate with cutting-edge skills that are valued by employers. Our programme content remains current with rapidly changing technology and industry developments.



UK Recognised Education

ECT is OfS registered, meeting the Office for Students' requirements for course quality, academic standards, student support and student protection.



Lecturers and Instructors

Our teachers are subject specialists with industry experience and the requisite academic qualifications. They bring extensive expertise from across the engineering sector, ensuring students learn from experienced professionals with both academic and real-world knowledge.



Unique Delivery Model

We deliver our programmes via a unique delivery methodology that makes use of live and interactive tutorials, an international pool of expert lecturers, dedicated learning support officers, hands-on workshops and state-of-the-art remote labs connected to real equipment, and simulation software.

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Introduction – Presenter

Naser Hashemnia



Naser Hashemnia is recognized as a Global Technical Specialist in network control applications aimed at supporting grid resilience and ensuring secure, reliable power system operation across large-scale transmission networks. With a PhD in Electrical Engineering and more than 15 years of industry experience in global organizations, Naser brings a wealth of expertise to the table.

Their skills cover a wide range, including SCADA/EMS, protection systems, earthing, and advanced power system control. Naser is particularly focused on enhancing grid reliability, operational resilience, and modern utility network performance.

Agenda

1.	Introduction
2.	Why Electrical Safety Matters
3.	Common Industry Challenges
4.	Why Earthing Systems Fail
5.	Lightning Protection Misconceptions
6.	Understanding Electrical Events
7.	Hidden Electrical Hazards
8.	Common Mistakes Engineers Make
9.	About the Course





Why Electrical Safety Matters

- Electrical failures are rarely random
- Often caused by:
  - Design flaws
  - Misunderstood principles
  - Gaps in practical knowledge
- Consequences:
  - Equipment damage
  - Downtime
  - Safety risks

Common Industry Challenges

- Ineffective earthing systems
- Misconceptions about lightning protection
- Hidden electrical hazards
- Lack of practical application in design



Why Earthing Systems Fail

- Poor design or installation
- Soil resistivity issues
- Lack of testing and maintenance
- Incorrect assumptions in system behavior





Lightning Protection Misconceptions

- “Lightning protection is only for tall structures”
- “One solution fits all systems”
- Ignoring surge protection integration
- Underestimating indirect lightning effects



Understanding Electrical Events

- Lightning: High-energy natural discharge
- Surge: Temporary overvoltage
- Switching events: System-induced disturbances
- Why distinguishing them matters for protection design

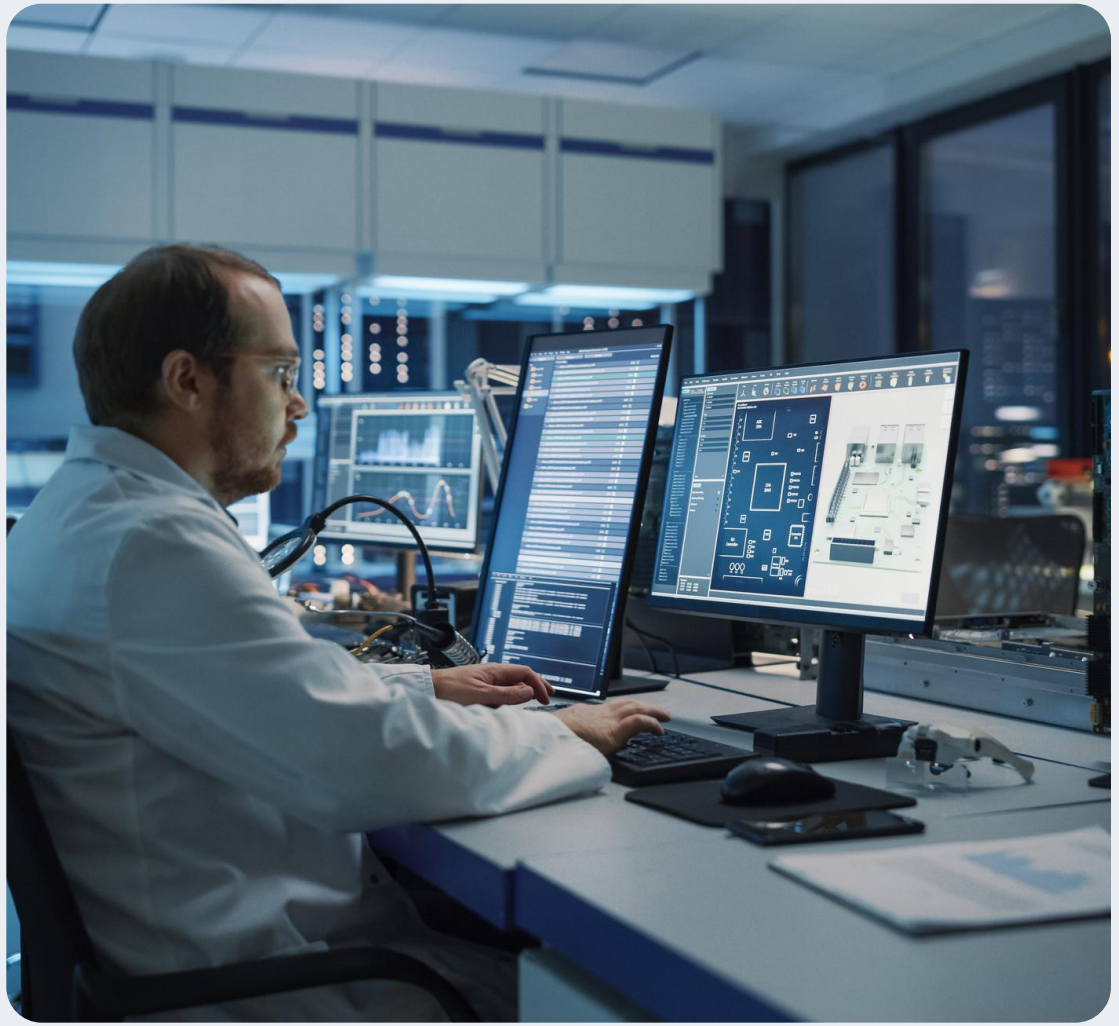
Hidden Electrical Hazards

- Poor grounding connections
- Arc flash risks
- Equipment insulation failures
- Inadequate system coordination



Common Mistakes Engineers Make

- Over-reliance on theory
- Ignoring site-specific conditions
- Poor system integration
- Lack of compliance awareness



Practical Takeaways

- Design with real-world conditions in mind
- Regular testing and validation
- Integrate earthing + lightning protection strategies
- Prioritize safety and compliance



What Course Is This?

Professional Certificate in Essential Practices for Electrical Safety, Earthing, and Lightning Protection

- 3 months
- Delivered by EIT
- Live & Online
- 18 May 2026

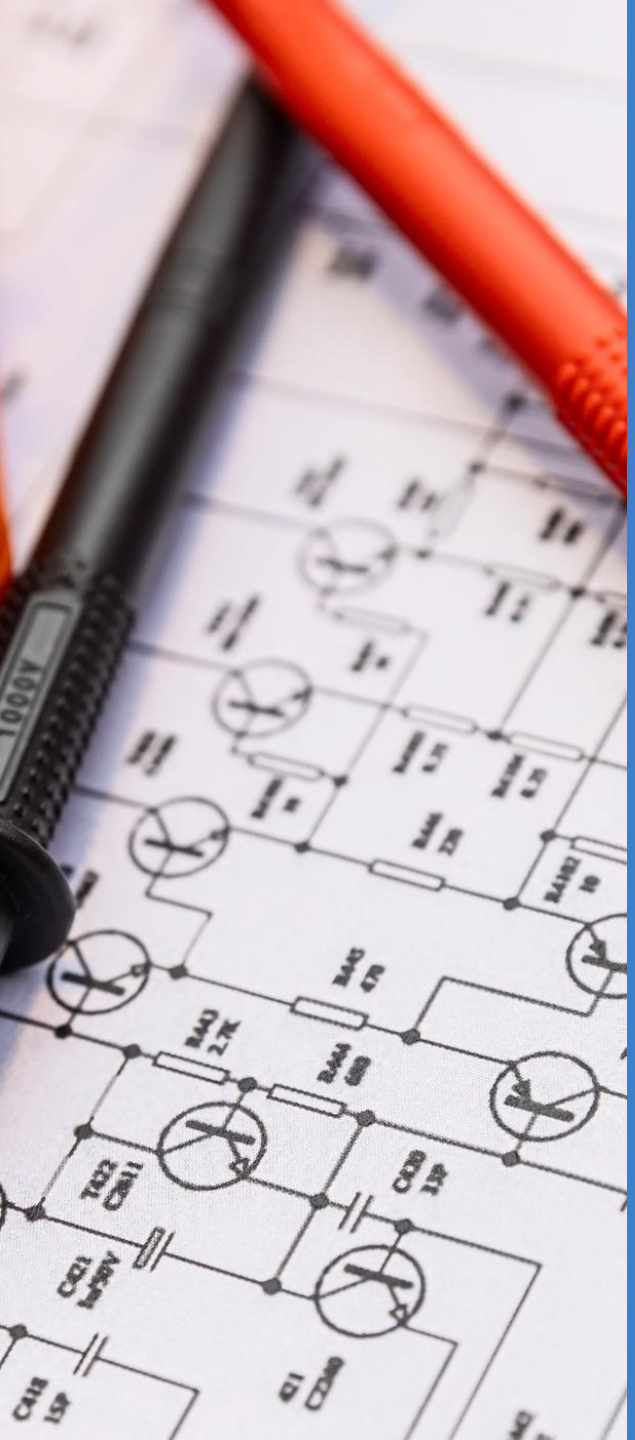


Course Overview

- Developed with the support of the Australian Government's Microcredentials Pilot in Higher Education
- Provides comprehensive understanding of electrical safety and earthing systems design and analysis
- Offers advanced knowledge of lightning protection schemes and their application
- Includes practical training on using ETAP software for modelling and analysing electrical safety and earthing systems

You will receive a digital badge on completion.





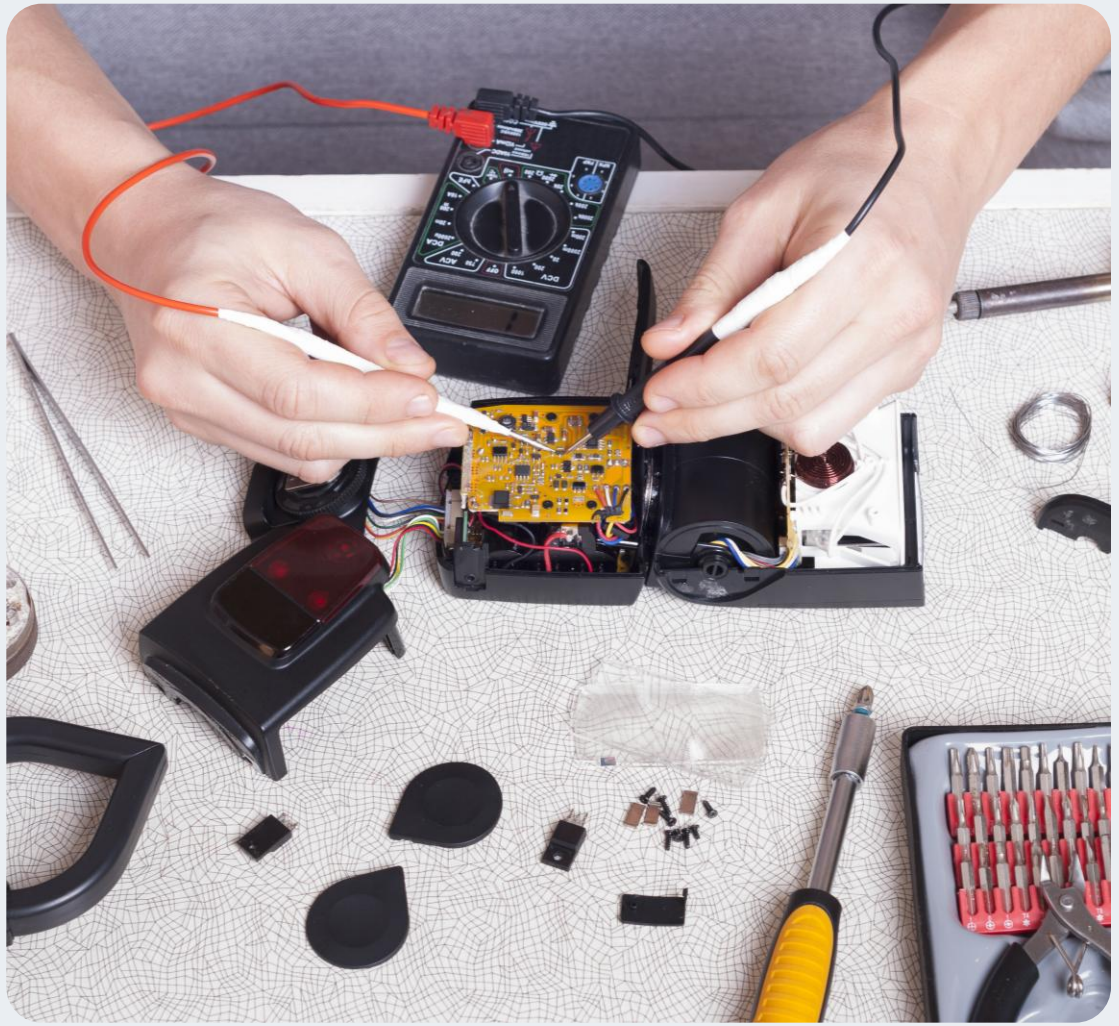
Upon Completion, You Will Be Able To:

- Understand critical electrical safety principles, including earthing and lightning protection systems.
- Gain practical knowledge of safety standards and compliance requirements in electrical engineering.
- Develop skills to identify, assess, and mitigate electrical hazards in workplace environments.
- Learn to design and implement effective earthing and lightning protection solutions.
- Prepare for career advancement in electrical engineering and safety roles

Pathway To Higher Education:

This course, developed in consultation with industry experts, equips you with skills and knowledge that are highly valued by employers.

Upon successful completion, if you apply and are accepted into EIT's Bachelor of Science (Electrical Engineering), you may obtain credit for the BEE310 unit.



Course Benefits:

- You may be eligible to claim CPD points through your local engineering association
- Receive a Certificate of Completion from EIT
- Learn from well-known faculty and industry experts from around the globe
- Flexibility of attending anytime from anywhere, even when you are working full-time
- Interact with industry experts during the webinars and get the latest updates/announcements on the subject
- Engage in global learning alongside students from diverse backgrounds and experiences, offering excellent networking opportunities





Certification Requirement

To receive a certificate of completion, students must:

- Attend at least 65% of the live, online weekly webinars
- Alternatively, submit detailed summaries or notes in lieu of attendance
- Achieve an overall mark of at least 50% across all assessments
    - Assessments include a practical assessment and a proctored exam
- Score a minimum of 50% in the proctored exam to pass the course
- Achieve 100% in all weekly quizzes
- Resubmission or re-attempt is allowed:
    - Only for the practical assessment and weekly quizzes
        - Not permitted for the proctored exam



Fees And Payment Options

- For full current fees in your country go to the drop-down filter at the top of the course page or visit the Fees page.

Payment Methods

- Learn more about payment methods, including payment terms and conditions and additional non-tuition fees.

Special offer for Australian citizens

Australian citizens may be eligible for a special price of AUD **$249** for this course using the code **CEP50**. Terms and conditions apply. Speak to a Course Advisor to learn more.



Available Scholarships

Scholarships are available for this course.

Please see the links below for more information on eligibility.

EIT – Professional Growth Bursary
EIT – Skills Advancement Bursary

If you are a current EIT student, Speak to a Course Advisor to learn more.



Time Commitment And Duration

- Expect to spend approximately 5–8 hours per week on course content
- Weekly live webinars:
  - Run for about 90 minutes
  - Include class discussions and Q&A opportunities
  - Require a 65% attendance rate to graduate
- If you can’t attend live, you may:
  - Watch the recorded webinar
  - Submit a summary of what you learned to the Learning Support Officer (LSO)
  - These summaries count toward your attendance



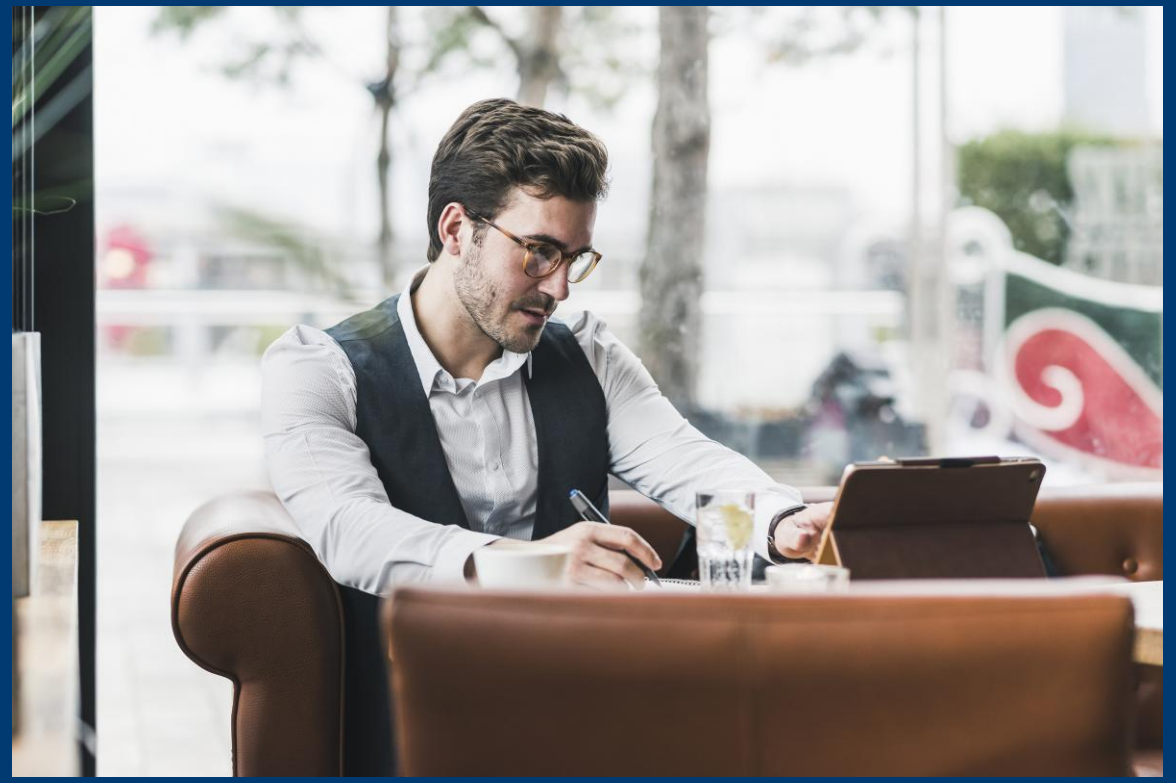
Time Commitment And Duration

- The course is:
  - Delivered online
  - Intensive part-time, designed to fit around full-time work
  - Three months in duration

If you face challenges:

- Due to work or personal commitments
- Or find the pace or content difficult

You are encouraged to contact your designated LSO for support



Thank You!

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Upcoming Programmes

Engineering College of Technology (ECT) *UK-Recognised Qualifications*	Start Date
Bachelor of Engineering (Honours) in Industrial Automation	September 2026, February 2027
Bachelor of Engineering (Honours) in Electrical Engineering	September 2026, February 2027
Master of Science (Power System Analysis and Renewable Integration)	October 2026, February 2027
Master of Science (Industrial Automation and Instrumentation Control)	October 2026, February 2027

Professional Certificates

Looking to upskill further? Check out the Professional Certificates!

These **3-month, non-accredited Professional Certificates of Competency**, delivered by ECT's affiliated institute, EIT, are designed by industry leaders and academics for technicians, technologists, engineers, and engineering professionals seeking to advance their expertise in a specific area. Featuring live, interactive webinars led by expert instructors with technical know-how, along with dedicated learning support, these courses are the perfect complement to an existing degree, qualification, or relevant work experience.

Find out more!

Contact Us:

Website
www.ect.ac.uk

Programmes
https://www.ect.ac.uk/programmes/

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