EIT Engineering Institute of Technology. | ECT Engineering College of Technology. | ECST Engineering College of Science and Technology.

Mastering Electrical Safety: Practical Lessons in Earthing and Lightning Protection

Tuesday, 28 April 2026| Technical Webinar

Naser Hashemnia

EIT Lecturer

Watch Webinar Recording Here

About EIT

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

Engineering Specialists

EIT is one of the only institutes in the world specializing in Engineering. We deliver professional certificates, diplomas, advanced diplomas, undergraduate and graduate certificates, graduate diplomas, bachelor's and master's degrees, and a Doctorate of Engineering.

Industry Oriented Programs

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

World-Class Australia Accredited Education

Our vocational programs and higher education degrees are registered and accredited by the Australian Government. We have programs that are also recognized under three international engineering accords.

Industry Experienced Lecturers

Our lecturers are highly experienced engineers and subject specialists with applied knowledge. The technologies employed by EIT, both online and on-campus, enable us to source our lecturers from a large, global pool of expertise.

Unique Delivery Model

We deliver our programs via a unique delivery methodology that makes use of live and interactive webinars, an international pool of expert lecturers, dedicated learning support officers, and state-of-the-art technologies such as hands-on workshops, remote laboratories, and simulation software.

ECT delivers interactive and online **UK qualifications**. ECT is committed to providing students with a world-class education, where they acquire the knowledge and skills that are applicable and valued in industry.

- Bachelor of Engineering (Honours) in Industrial Automation
- Bachelor of Engineering (Honours) in Electrical Engineering
- Master of Science (Power System Analysis and Renewable Integration)
- Master of Science (Industrial Automation and Instrumentation Control)

Learn more here.

Registered UK Higher Education Provider | UKPRN: 10089771

ECST delivers a **South African accredited qualification** on-campus. ECST is committed to providing students with a world-class education, where they acquire the knowledge and skills that are applicable and valued in industry.

- Bachelor of Engineering Technology in Electrical Engineering (SAQA 123645)

Learn more here.

The Engineering College of Science and Technology (Pty) Ltd is provisionally registered with the Department of Higher Education and Training until 31/12/2028 as a private higher education institution under the Higher Education Act, 1997. Registration certificate no. 2025/HE07/007.

Disclaimer

The courses and qualifications mentioned in this presentation are offered by separate legal entities operating in different jurisdictions – one in Australia, one in South Africa and one in the United Kingdom. Each entity is subject to its own local regulatory requirements and accreditation standards.

Prospective students should refer to the relevant institution's official website for accurate, up-to-date information specific to their location, including course availability, fees, regulatory status, and enrolment conditions.

- For the Engineering Institute of Technology (EIT) visit: https://www.eit.edu.au/
- For the Engineering College of Technology (ECT) visit: https://www.ect.ac.uk/
- For the Engineering College of Science and Technology (ECST) visit: https://www.ecst.ac.za/

Event Conduct

Please keep discussion lawful and respectful; follow the moderator’s directions.
Do not share illegal or abusive content. Recording is not permitted unless authorised.
Breaches may lead to removal.

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

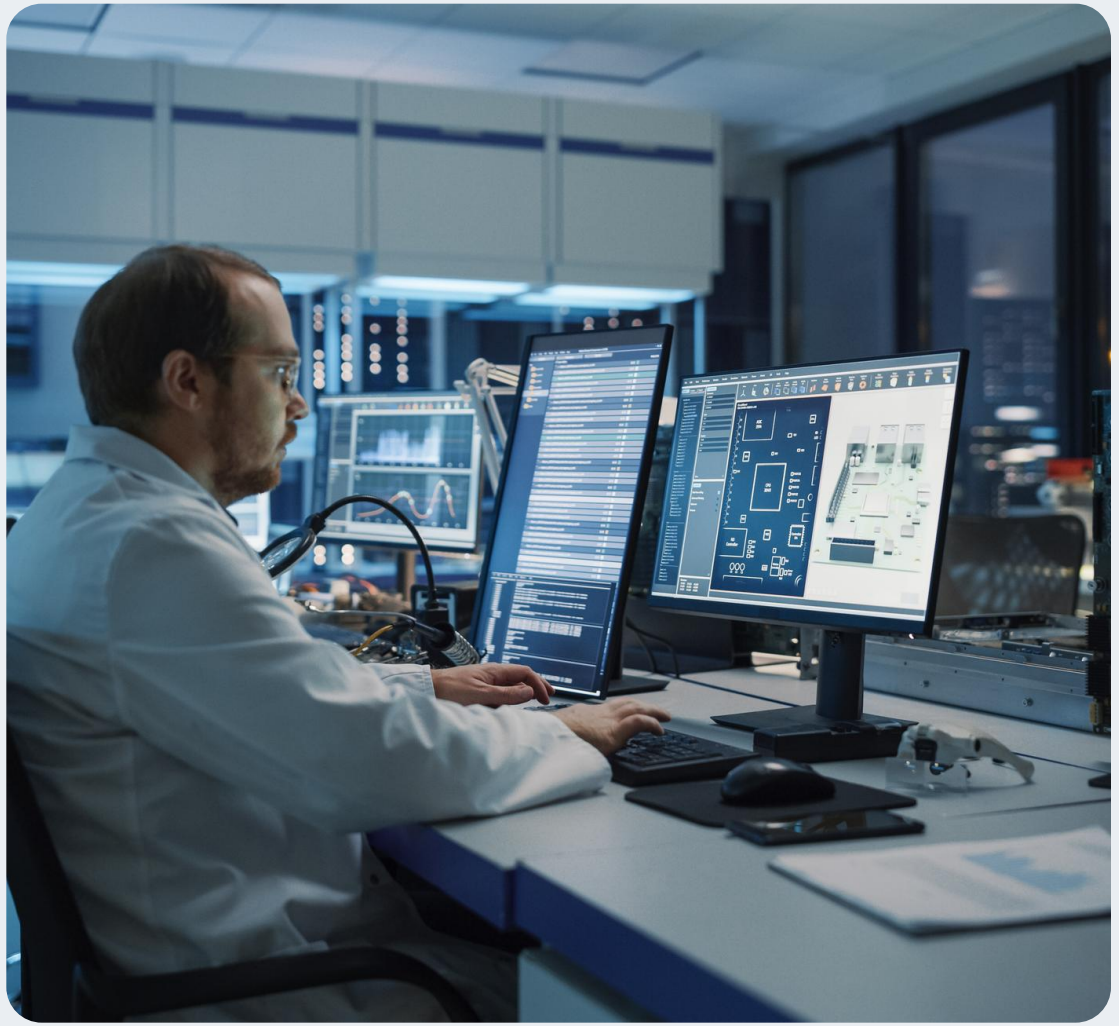
- Lightning: High-energy natural discharge
- Surge: Temporary overvoltage
- Switching events: System-induced disturbances
- Why distinguishing them matters for protection design

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?

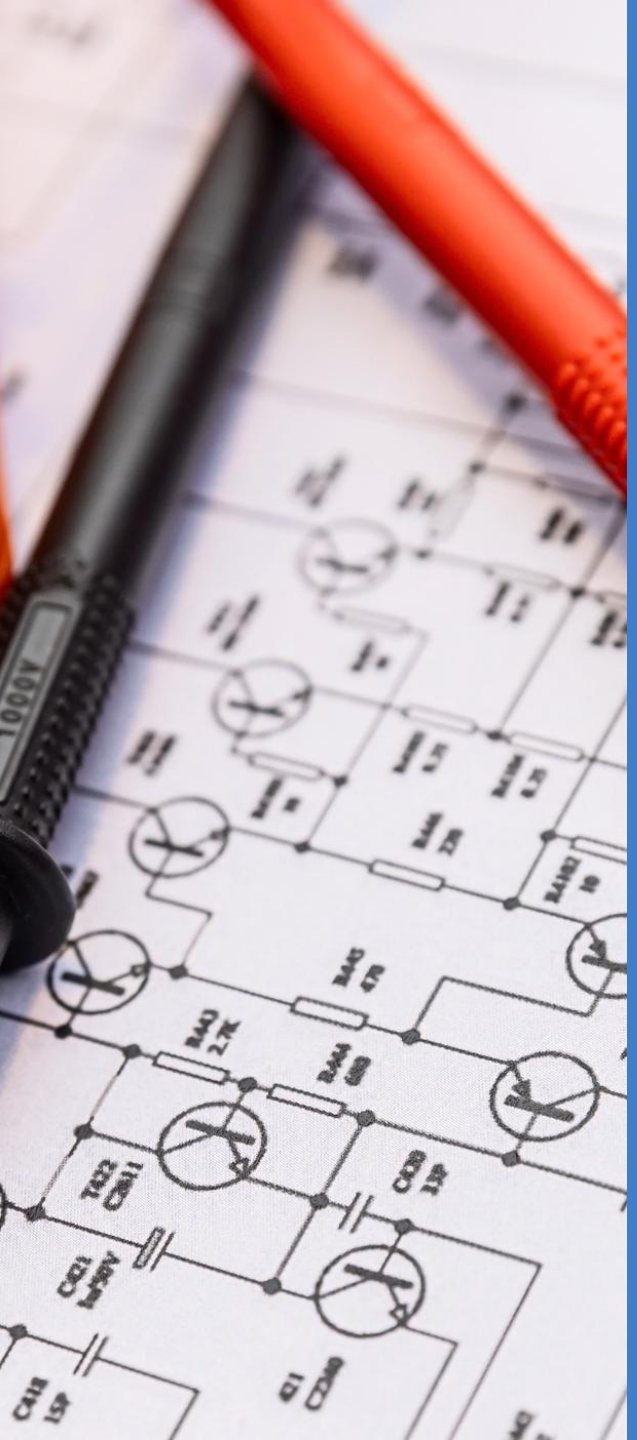
Professional Certificate in Essential Practices for Electrical Safety, Earthing, and Lightning Protection

- 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.



EIT Engineering Institute of Technology. | ECT Engineering College of Technology. | ECST Engineering College of Science and Technology.

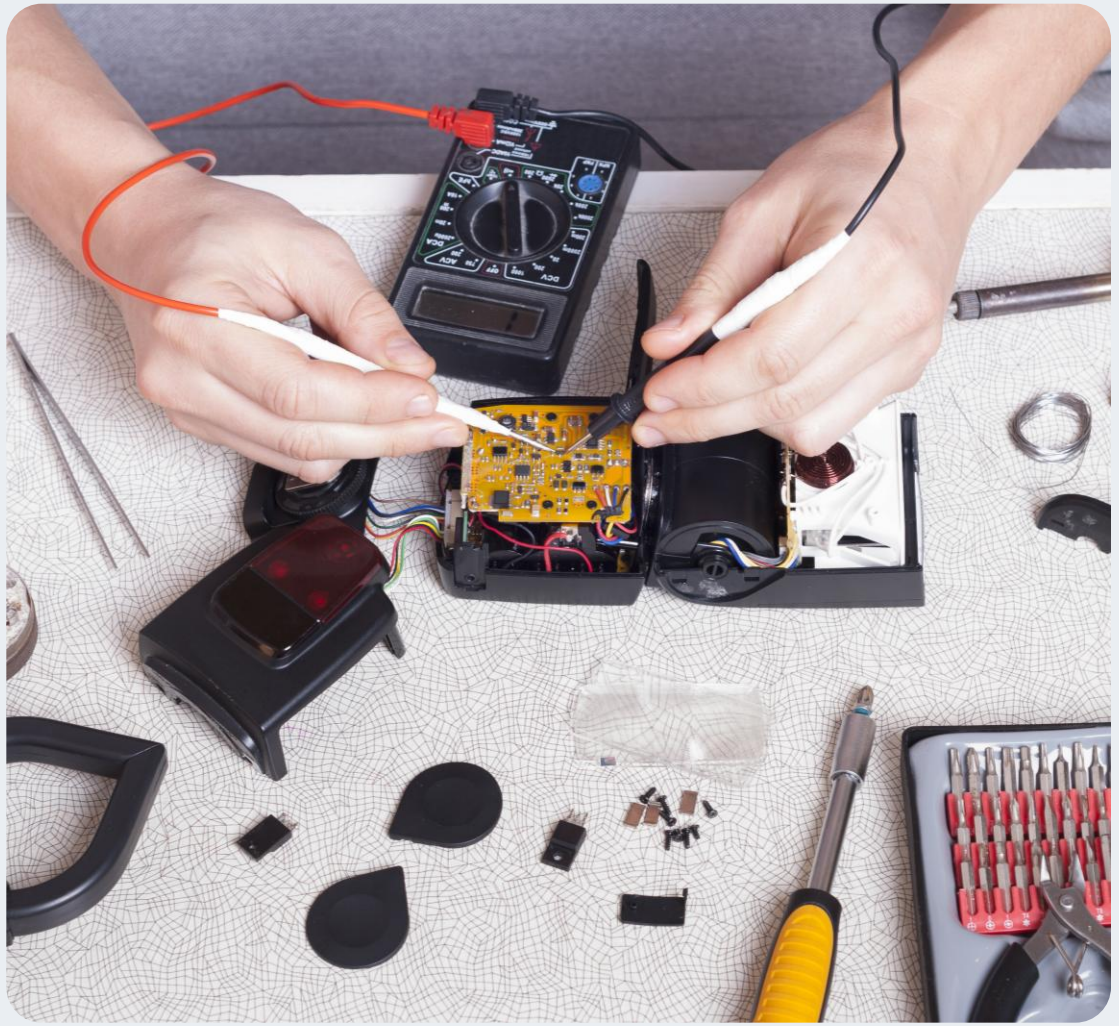
Upon Completion, You Will Be Able To:

- 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

EIT Engineering Institute of Technology. | ECT Engineering College of Technology. | ECST Engineering College of Science and Technology.

Thank You!

Q&A

EIT
Engineering Institute of Technology.

ECT
Engineering College of Technology.

ECST
Engineering College of Science and Technology.

Contact Us:

Website
www.eit.edu.au

Head Office
6 & 8 Thelma Street, West Perth,
Perth, WA 6005

Phone
Inside Australia: 1300 138 522
Outside Australia: +61 8 9321 1702

Email
webinars@eit.edu.au

Courses
https://www.eit.edu.au/schedule/

Website
www.ect.ac.uk

Head Office
Whittle Way, Stevenage SG1 2FS,
United Kingdom

Phone
Inside UK: 0208 335 4014
Outside UK: +44 208 335 4014

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

Website
www.ecst.ac.za

Head Office
Unit 3, Elevation Gardens,
Elevation Close, Waterfall
Office Park, Midrand, 1686

Phone
Within South Africa: 010 823 4497
Outside South Africa: +27 11 823 4497

Programmes
www.ecst.ac.za/course-types/bachelor-of-engineering/