Engineering Institute of Technology.

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Clinical Engineering Fundamentals

11 February 2026

Presenters: Kerry Newlin & Bruce Morrison
EIT Lecturers

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, bachelor's and master's degrees, and a Doctorate of Engineering.

Industry-Driven 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 Australian 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, through Engineers Australia.

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, hands-on workshops and state-of-the-art remote labs, connected to real equipment, and simulation software.

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

Kerry Newlin

Meet Dr Kerry Newlin, an enthusiastic lecturer and assessor working with EIT since 2016. Kerry is part of our Advanced Diploma of Biomedical Engineering team and lends her expertise in presenting and assessing the anatomy and physiology module as well co-presenting and assessing the medical informatics and telemedicine module and assistive technology and biomechanics module.

Kerry is a nurse practitioner by background with a Doctor of Science degree in healthcare reform and global medicine. Her career spans the globe from her native United States to Central America, Africa, Timor Leste and now Australia. Kerry has spent much of her career instructing and mentoring people in the healthcare profession and considers it a privilege to be able to share her knowledge with students in the field of biomedical engineering.

Kerry is married to Bruce Morrison, a biomedical engineer with 45+ years in the profession and together they work as advisors for NSW Health to procure and commission medical equipment in public hospitals.

Introduction – Presenter

Bruce Morrison

Bruce Morrison is an online lecturer with EIT working to develop the next generations of biomedical engineering technicians within the Advance Diploma in Biomedical Engineering.

Bruce Morrison has an electrical engineering degree from UNSW and a Master of Applied Science in Clinical Measurement from UTS. He is a fellow of the Institution of Engineers, Australia, a chartered professional engineer and is registered on the National Engineers Register. He is the immediate past president of the Society for Medical and Biological Engineering, NSW Inc. and currently the honorary secretary, and has been chairman and deputy chairman of the Board of the College of Biomedical Engineers, and a member of the National Committee for Clinical Engineering. He is the convenor of the annual SMBE biomedical engineering conference.

Mr Morrison has over forty-five years' experience in biomedical engineering as a technician, engineer and manager. He has extensive experience both in NSW hospitals' biomedical engineering departments and across developing countries with long periods spent in Papua New Guinea and Timor-Leste, and several shorter periods in eight Pacific Island Countries.

Mr Morrison worked with NSW Health Infrastructure for five years in advising on the delivery of major and minor medical equipment to hospital redevelopment projects across NSW. He now runs his own company, Morrison Newlin Consulting with his wife Dr Kerry Newlin, a registered nurse/nurse practitioner using his expertise in medical equipment procurement, maintenance systems and commissioning processes.

He has trained biomedical engineering technicians and nurses in developing countries across the Asia Pacific region in medical equipment care, operation, and repair and is now putting his training expertise to good use in providing training and mentoring to young biomedical engineers and technicians with EIT.

Engineering Institute of Technology.

By the end of this session, you will:

- Understand the role of clinical engineering in modern healthcare
- Gain insight into the technical scope of the EIT Professional Certificate
- Learn how the course supports career development and compliance

What is Clinical Engineering?

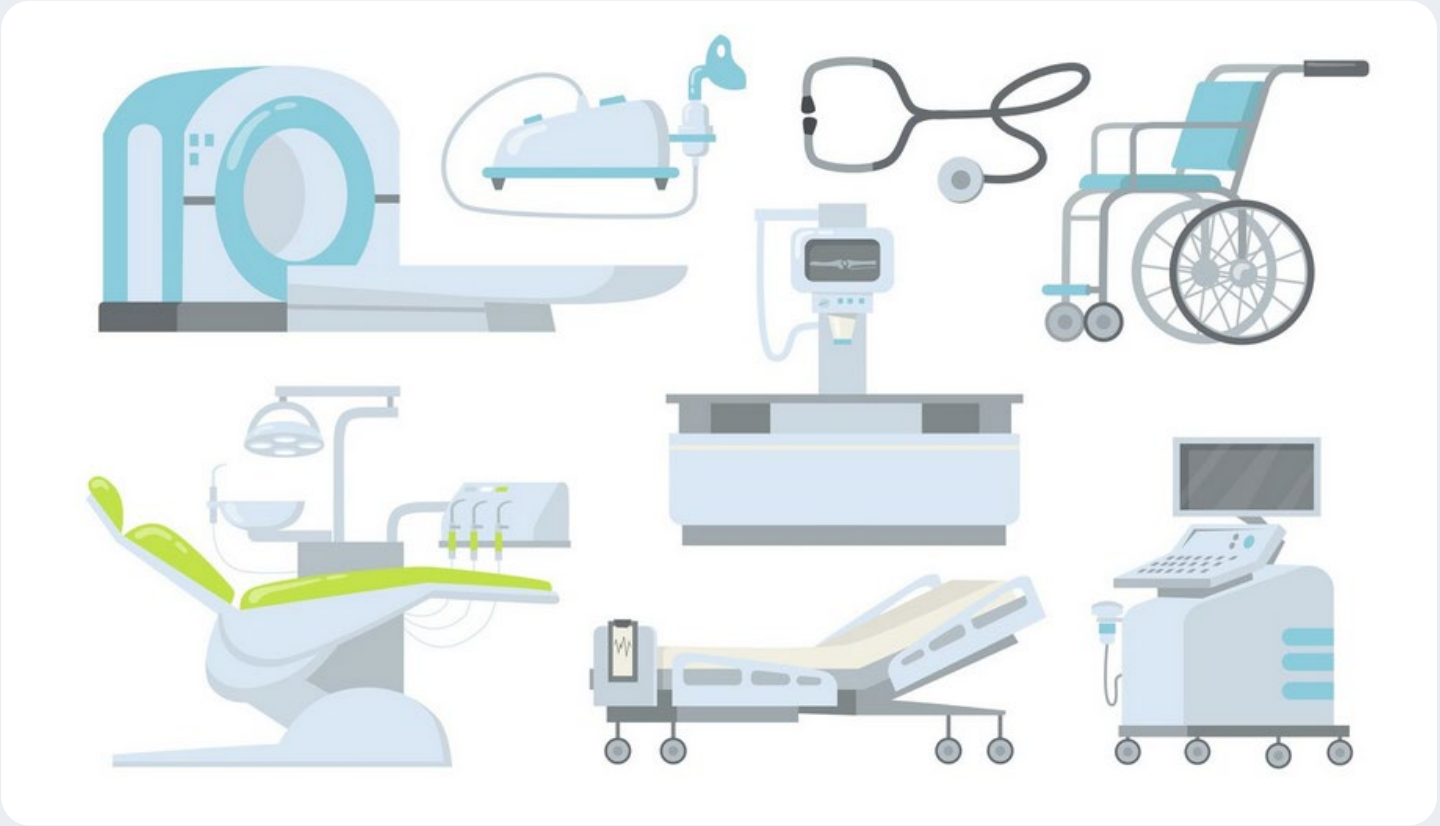
- Definition and scope of clinical engineering
- Interface between engineering and clinical practice
- Role in Healthcare Technology Management
- Role in patient safety, device performance, and healthcare efficiency
- Typical stakeholders: clinical staff, hospital management, IT, regulators

The Growing Importance of Clinical Engineering

- Increasing complexity of medical technologies
- Integration of medical devices with networks and digital health records
- Increasing importance of cybersecurity
- Regulatory and safety requirements in healthcare environments
- Global demand for skilled clinical engineering professionals

Common Challenges in Healthcare Technology Management

- Equipment downtime and maintenance risks
- Compliance with standards and regulations
- Managing diverse device types across departments
- Integrating medical devices across the care journey
- Differences in professional backgrounds, education and approaches across engineering, IT and clinical teams



Course Overview

Professional Certificate of Competency in Clinical Engineering Fundamentals

Duration: 3 months (part-time, online)
Starts 10 March 2026

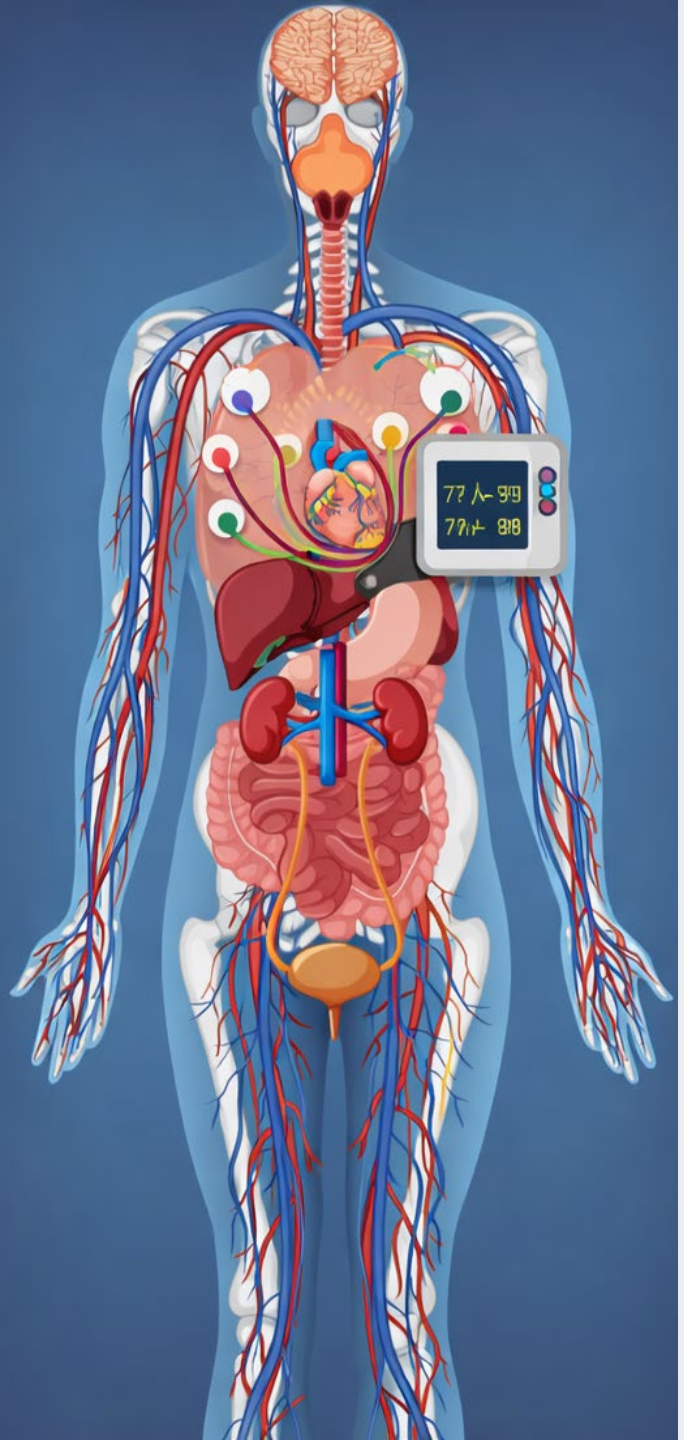
Live, interactive webinars

Industry-experienced instructors

Practical, workplace-relevant focus

Who Should Attend This Course?

- Biomedical engineers and technicians from other sub-disciplines within biomedical engineering
- Engineers from other branches of engineering (e.g., electrical, mechanical, mechatronic)
- Engineering technicians and technologists from other branches of engineering
- Healthcare technology managers
- Professionals transitioning into clinical environments



Technical Topics Covered

- Fundamentals of clinical engineering
- Medical equipment - design and maintenance
- Medical equipment principles in the cardiovascular system
- Medical equipment principles in the respiratory system
- Medical equipment principles in the nervous and renal systems
- Biological signals, sensors, circuits and measurements
- Medical equipment in critical care units
- Medical equipment in the operating room
- Medical equipment in general hospital use
- Medical imaging and medical gases - systems and equipment
- ICT and networking in the hospital
- Operating systems, databases, configuration management and interoperability

Clinical Equipment Exposure

- Critical care and life-support systems
- Diagnostic and monitoring equipment
- Operating theatre technologies
- Radiology and imaging systems (overview level)

Digital Health, ICT & Cybersecurity

- Medical device connectivity and networking basics
- Data integrity and cybersecurity risks
- Role of clinical engineers in connected healthcare systems
- Supporting safe digital transformation

Learning Outcomes & Practical Benefits

After completing the course, participants can:

- Apply engineering principles in clinical settings
- Improve equipment safety and reliability
- Communicate more effectively with clinical and IT staff
- Support compliance and operational efficiency

Career & Professional Development Value

- Enhances technical credibility in healthcare environments
- Supports CPD requirements
- Provides a pathway to advanced biomedical or clinical engineering roles
- Applicable across hospitals, clinics, and service providers

How You Will Learn at EIT

- Live online classes with global peers
- Recorded sessions for flexibility
- Hands-on, practical assignments
- Ongoing academic and technical support

Case Study / Example Scenario

Example: Managing a critical care device failure

- Identifying technical and clinical risks
- Applying safety and maintenance principles
- Collaborating with clinical teams
- Lessons aligned with course content

Enrolment & Next Steps

- Course start dates
- Entry requirements
- Assessment approach
- How to apply and key contacts

Key Takeaways

- Clinical engineering is critical to safe, effective healthcare delivery
- This course builds essential, job-ready technical competencies
- Flexible learning designed for working professionals

Thank You!

Upcoming Courses

Please note: courses listed below are subject to their own regulatory requirements—refer to the relevant website for further information.

Engineering Institute of Technology (EIT) *Australian Accredited Qualifications & Short Courses*	Start Date
Professional Certificate of Competency in Clinical Engineering Fundamentals	10 March 2026
52872WA Advanced Diploma of Robotics and Mechatronics Engineering	8 April 2026
Online - Master of Engineering (Industrial Automation)	29 June 2026
Online - Master of Engineering (Electrical Systems)	29 June 2026
Graduate Certificate in Industrial Automation and Machine Learning	29 June 2026
52885WA Advanced Diploma of Biomedical Engineering	4 August 2026

Enter EIT's Photo Challenge

Showcase engineering from anywhere in the world, one photo, one moment.
Closes: 31 March 2026 (5pm AWST)

How to Enter

- Capture an engineering-related photo
- Post on Instagram, LinkedIn, Facebook or TikTok
- Use **#EITPhotoChallenge2026** and tag EIT

Prizes

1st: US$1,000
2nd: US$750
3rd: US$500
5 × US$100 prizes

Global competition | Winners selected by EIT |
Terms and Conditions apply.

Q&A

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

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