

Professional Certificate of Competency in Fundamental E&I Engineering for Oil & Gas Facilities

Study Online | 3 Months

Course Overview

This professional development course is designed for engineers and technicians who need to update their skills and knowledge in the latest electrical and instrumentation technologies, as applied to the oil and gas industry.

This course will focus on delivering the practical knowledge required for electrical and instrumentation (E&I) technicians, technologists, and engineers in the oil and gas industry.

There is now an increasing need for higher technology methods of obtaining and processing oil and gas as it is a finite declining resource. As a result, the technical challenges of extracting oil and gas are becoming ever more demanding, with an increasing emphasis on more marginal fields and previously inaccessible zones such as deep oceans, Polar regions, Falkland Islands and Greenland.

During this course, we will cover a whole spectrum of activities ranging from basic electrical and instrumentation engineering, through to advanced practice in hazardous areas and data communications.

We will also take an in-depth look at a vast array of electrical and instrumentation equipment used in an oil and gas environment, as well as examples of practical treatment of electrical power systems and instrumentation within the oil, gas, petrochemical, and offshore industries.

While this course will cover the necessary theory, it is used in a practical context, giving you the tools required to ensure that the electrical and instrumentation hardware is delivering the results intended.

Course Benefits

- › 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.
- › Experience a global learning with students from various backgrounds and experience which is a great networking opportunity.
- › Get abreast with the skills and knowledge in the latest electrical and instrumentation technologies that are applicable in the oil and gas industry.
- › Understand the fundamentals of electrical, process control and instrumentation engineering and their application on Oil & Gas systems like wellhead, pipelines, and power system.
- › Discuss the protection systems and safety instrumentation and emergency shutdown systems that are critical for safe operations.

Specifications

Study Mode	Online
Duration	3 Months
EIT Course Code	COG

Entry Requirements

There are no entry requirements. This course is aimed at those working individuals looking to upskill or reskill in a particular field.

Time Commitment

You are expected to spend approximately 5-8 hours per week learning the course content. This includes reviewing pre-recorded webinar content and attending fortnightly webinars that run for about 90 minutes to facilitate class discussion and allow you to ask questions. This professional development program is delivered online and has been designed to fit around full-time work. It will take three months to complete.



Program Structure

The course is composed of 12 modules. These modules cover a range of aspects to provide you with maximum practical coverage in the field of Fundamental E&I Engineering for Oil & Gas Facilities.



MODULES

Module 1: Fundamentals of Electrical Engineering

- › Power systems
- › Power generation

Module 2: Fundamentals of Process Control Engineering

- › Instrumentation, measurement
- › Process measurement

Module 3: General Instrumentation Standards in Oil and Gas

- › Engineering standards, PID, electrical schematics
- › Calibration and errors

Module 4: Process Instrumentation

- › Flow
- › Pressure
- › Temperature

Module 5: Process Control Basics

- › Loop control
- › Feedforward, feedback, cascading
- › Control valves sizing, selection and maintenance (including pressure relief valves)

Module 6: Automated Control

- › Programmable Logic Controllers (PLCs)
- › SCADA systems

Module 7: Remote Control

- › Distributed control systems
- › Industrial data communications (including Fieldbus and industrial Ethernet)

Module 8: Safety Instrumentation and Emergency Shutdown Systems for Oil and Gas

- › IEC 61511 and IEC 61508
- › Basic introduction to SIS
- › LOPA, SIL

Module 9: Oil + Gas Control Systems – Wellhead

- › Wellhead and flowline control – control systems
- › Emergency wellhead blowout controls

Module 10: Oil + Gas Control Systems – Pipeline

- › Compressor control (including surge control)
- › Drilling control systems and instrumentation

Module 11: Oil + Gas Power Systems

- › Power generation
- › Cathodic protection

Module 12: Oil Gas Protection Systems

- › Subsea instrumentation and control systems
- › Pig launcher/receiver systems
- › Critical flare knock out drum controls and instrumentation
- › Flare flame front generator and ignition monitoring system

The EIT Online Learning Experience



As an online student, you will benefit from EIT's unique personalized synchronous delivery methodology, that encourages you to advance your knowledge while balancing life and work commitments.

Dedicated Learning Support Officers

EIT students are supported by dedicated Learning Support Officers (LSOs) for the duration of their studies. The LSO team provides individualized support to each student based on their personal course requirements, enabling our students a greater chance of succeeding.

Remote and Virtual Labs

Our lab hosting platform connects you to remote and virtual labs in real time. Once connected, you will have access to a wide range of engineering software and connected hardware, which may be used in practical assessments.

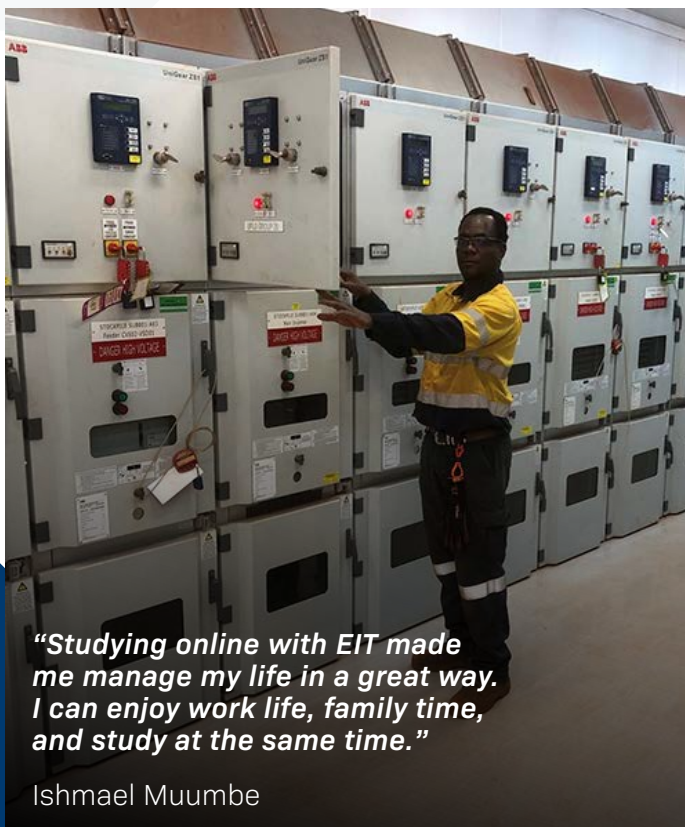
Remote Labs

Electromeeet connects you to hands-on remote labs in which you control physical equipment and sensors equivalent to the traditional university engineering lab. The practicals are interactive, controllable, variable, and viewable over webcams in real time.

Virtual Labs

Electromeeet hosts simulation software for a multitude of engineering applications, including modeling and analysis, science education, programming, power network design, construct models, design and drafting, industrial process control, and virtual plant field operations.

Please note that not every course incorporates these labs. Further information can be found on the course page under 'software used' if it does apply or contact us for further information.



"Studying online with EIT made me manage my life in a great way. I can enjoy work life, family time, and study at the same time."

Ishmael Muumbe

Engaging and Interactive

Live and Interactive Tutorials

Tutorials are live, interactive sessions conducted online using advanced web-conferencing software. Students join the industry expert lecturer or instructor and other participants from around the world in an online 'virtual classroom.'

You are able to watch a presentation and communicate with the lecturer or instructor and other students in real time with audio, a chatbox, and a variety of other interactive activities.

These tutorials will help to keep you motivated and engaged throughout the duration of the program. They usually last between 60 and 90 minutes, depending on the course and student interaction.

Flexibility

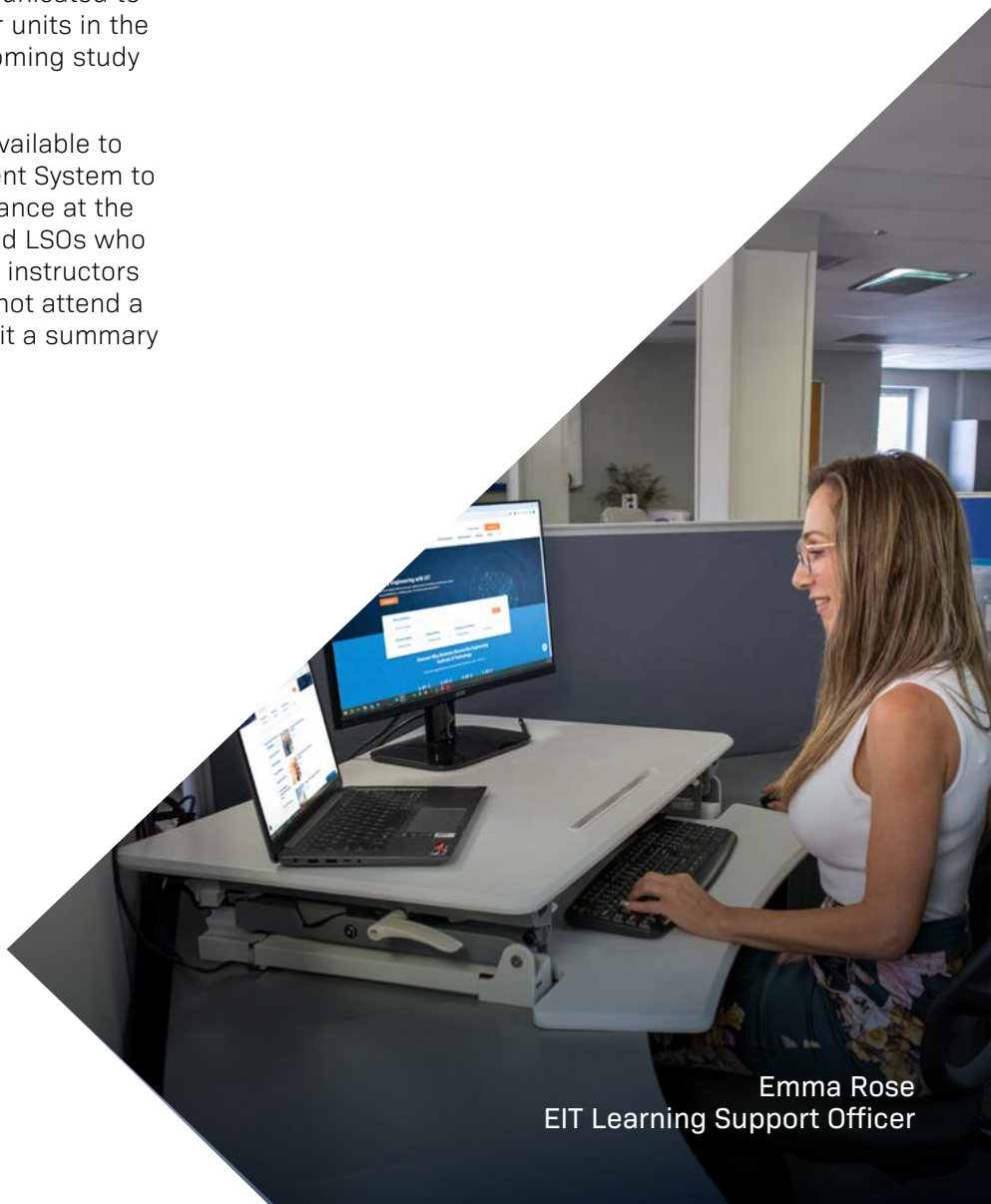
Dates and times of live tutorials are communicated to students when they are enrolled onto their units in the learning management system for the upcoming study period.

All live webinars are recorded and made available to students through our Learning Management System to watch as often as desired. Student attendance at the live webinars is monitored by our dedicated LSOs who also audit the session and the lecturers or instructors to ensure proper delivery. If a student cannot attend a live webinar, they will be required to submit a summary of the recorded webinar to their LSO.

eLibrary

We pride ourselves on providing you with quality learning resources. All teaching materials are delivered via our learning management system, Moodle, including lecture and tutorial slides, and a comprehensive reading list. We also provide access to an extensive online eLibrary and a wide range of engineering-focused library collections, including over 160 technical engineering manuals. Please note - for higher education programs, text books may need to be purchased.

The eLibrary also contains additional information to support students, including referencing guidelines, links and guides to open-access resources, and thesis papers written by our master's graduates.



Emma Rose
EIT Learning Support Officer



Ready to apply?

To apply, please fill out the form on the [course page](#) and one of our friendly and experienced Course Advisors will guide you through the application process.

Alternatively, you can contact your nearest EIT office by telephone. Please see [our website](#) for international EIT Office contact details.

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There are no entry requirements. This course is aimed at those working individuals looking to upskill or reskill in a particular field.

Study Pathways

[Learn more](#) about other courses, pathways to higher-level qualifications, and opportunities to upskill and cross-skill in certain fields of engineering.

Engineering Group Training

[Learn more](#) about customizing our courses and the available group training discounts.



Engineering Institute of Technology.

FIND OUT MORE AT WWW.EIT.EDU.AU

The information contained in this publication is accurate and current at the date of publishing (April 2024).
For the most up-to-date information, please visit our website: www.eit.edu.au

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