

Thank you for joining, we'll be starting shortly.

Please note the webinar will start at 3:00pm,
Australian Western Standard Time (AWST)



[Download Webinar Recording Here](#)

An Insight into EIT's Online Labs

Engineering Student Webinar

Presented By

James Theodosiadis
Project Engineer

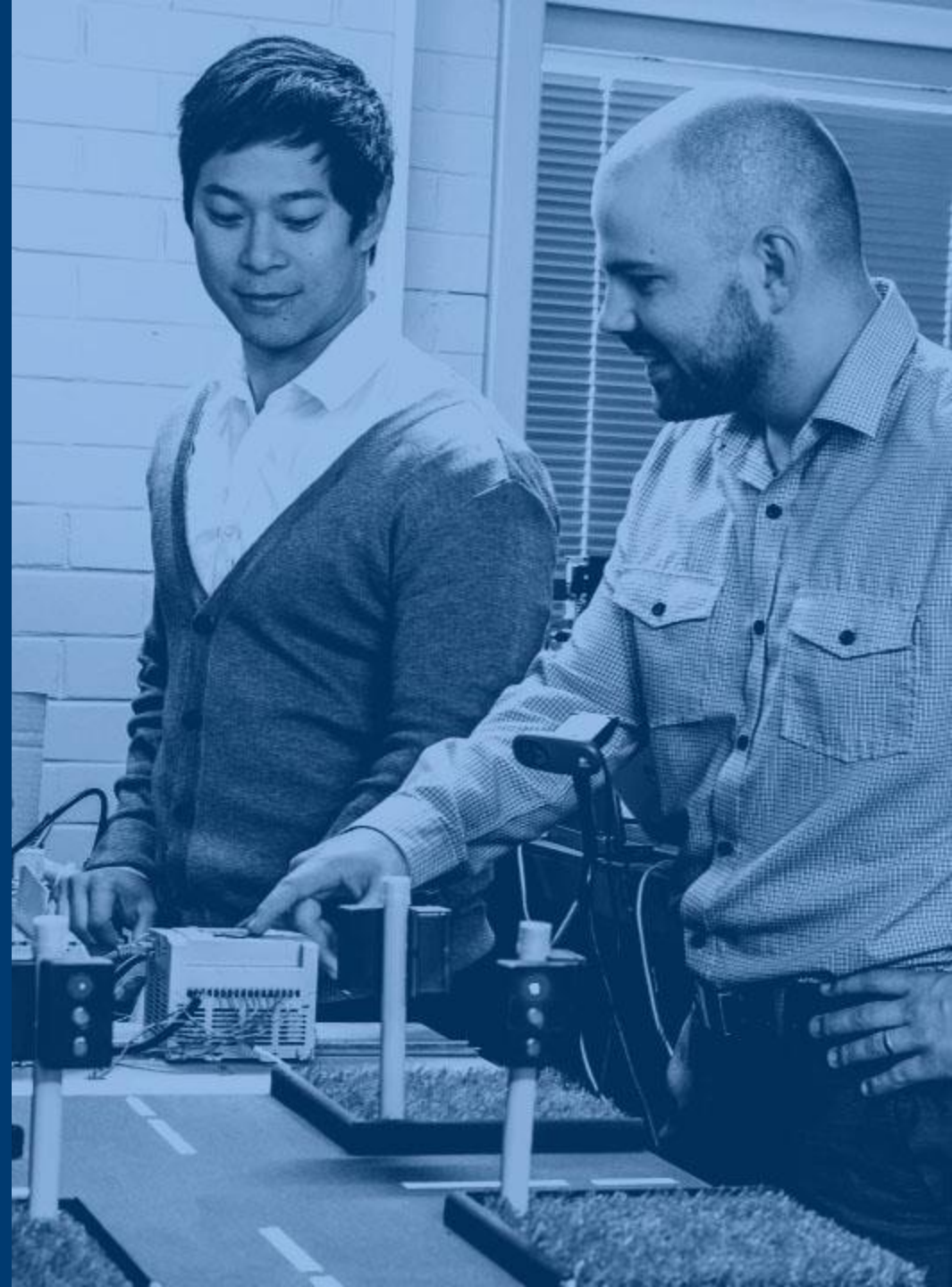
Dr. Harisinh Parmar
Laboratory Manager/Coordinator

Muhammad Usman Arif
Automation Engineer



Agenda

- | | |
|----------|---|
| 1 | Welcome & Introductions |
| 2 | About EIT |
| 3 | Remote Labs: Introduction, Demonstrations |
| 4 | Hands-on Workshops and Work Integrated Learning |
| 5 | Q & A |



Introductions

James Theodosiadis

Project Engineer

James is one of EIT's Project Engineers and has a Bachelor of Engineering from the University of Western Australia. Over the five years that James has worked at EIT, he has extensively contributed to the research, development, and management of EIT's practical labs and workshops, for both online and on-campus engineering students.

Dr. Harisinh Parmar

Laboratory Manager/Coordinator

Harisinh is EIT's Laboratory Manager and Coordinator and has been engaged with EIT since 2019. Harisinh has a Master's Degree in Chemical Engineering from RMIT University and completed his Ph.D. in Chemical Engineering at Curtin University. He oversees EIT's lab development and the practical components of EIT's Higher Education programs.

Muhammad Usman Arif

Automation Engineer

Usman has been working for EIT since 2020 as an Automation Engineer and is engaged in supporting lab development and the practical components of EIT's Higher Education programs. He has completed his Masters in Industrial Automation and Bachelors in Electrical Engineering.



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



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.



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 Doctor of Engineering.



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.



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.



Unique Delivery Model

We deliver our programs via a unique 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.

When studying at EIT, students complete practical exercises using a combination of remote and virtual laboratories and simulation software.

Practical Experience

In these remote and virtual laboratories students can control physical equipment and sensors equivalent to the traditional university engineering lab.

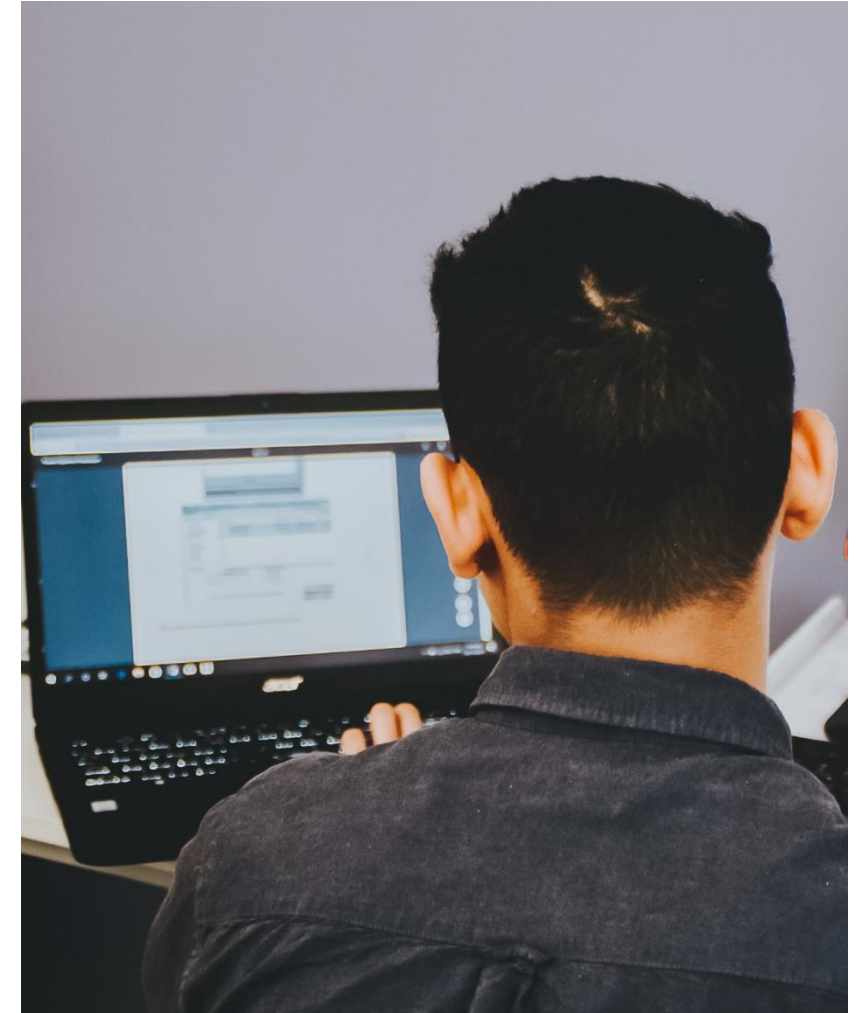
This means that even though you are studying online, you are not missing out on your hands-on, practical experience.

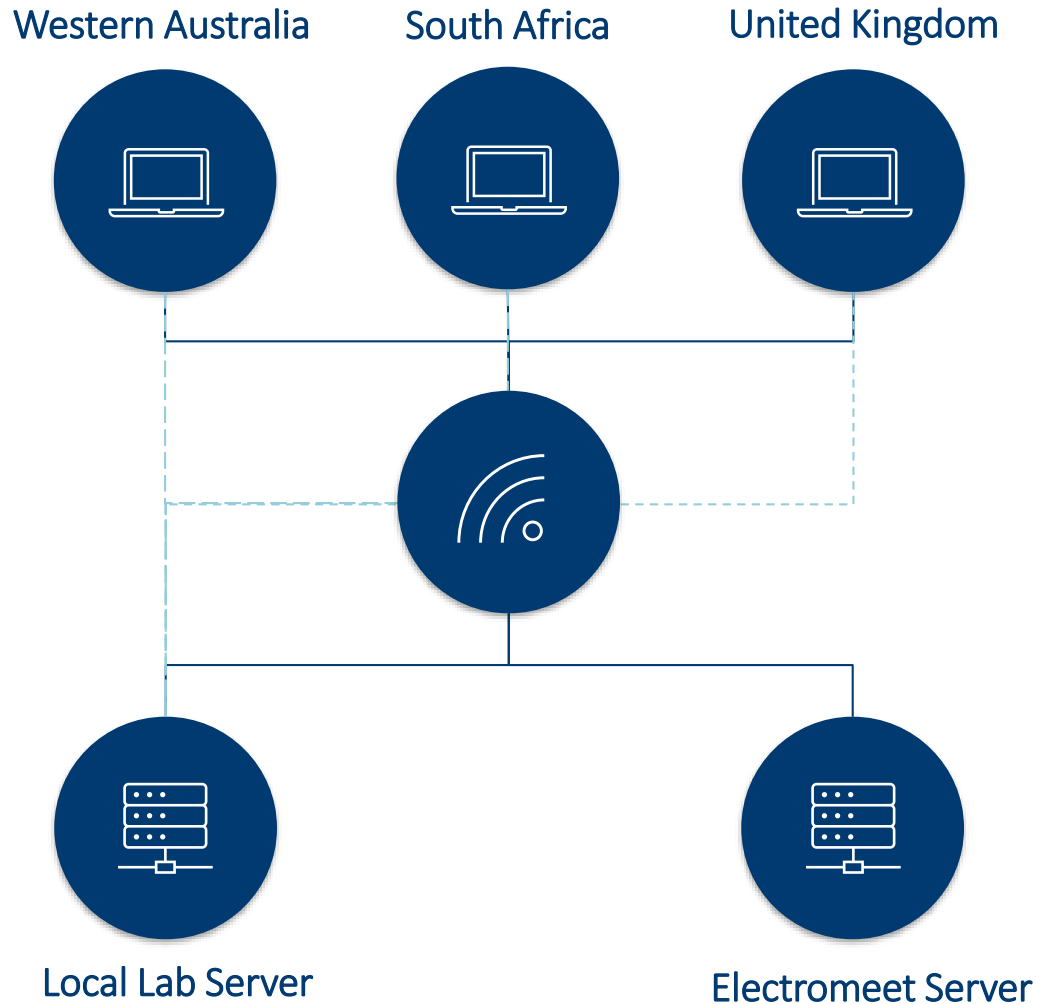
For the on-campus students, workshops and work integrated learning via an internship is incorporated into the student journey.

Real World Ready

Through these hands-on exercises using simulation software, remote laboratories, practical based assignments and interactive discussion groups, students can grasp new knowledge and apply it successfully to the real world.

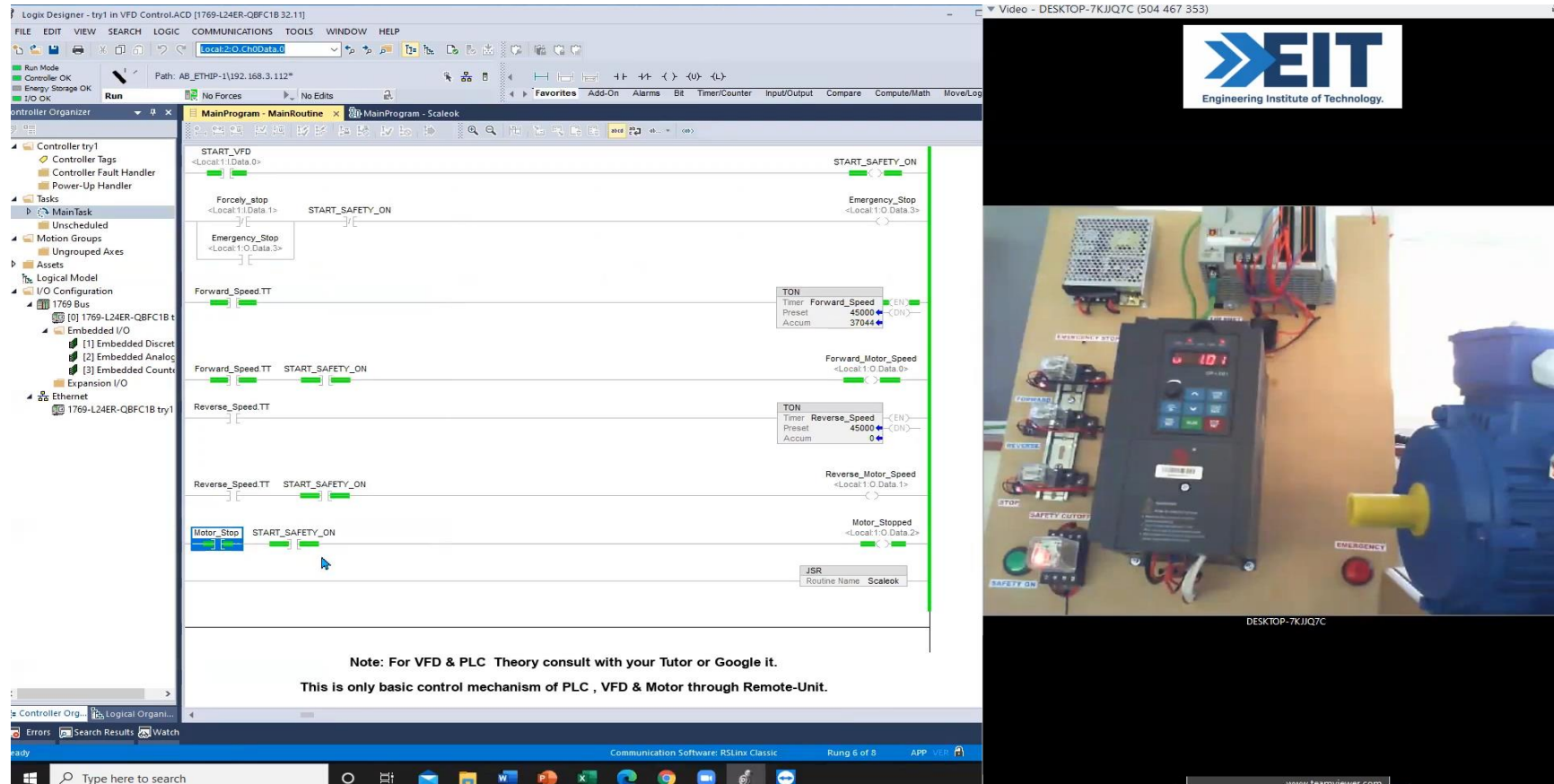
Each hosted engineering software and hardware can be controlled in real time; it's as simple as logging in and selecting an available lab and timeslot!





1. Traditional lab at a distance operating in real time
2. Accurate representation of current industry hands-on
3. Interfacing to equipment is digital and data driven
4. High availability and Asynchronous – anytime
5. Access to specialized equipment in a safe and near-limitless testing environment
6. No geographical barriers with diverse and global teams
7. Bandwidth requirements can be demanding

Remote and Virtual Labs: Examples



The screenshot displays the Logix Designer software interface for a VFD control system. The main window shows a ladder logic program with several rungs. Key components include:

- START_VFD**: A normally open contact connected to a coil.
- Emergency_Stop**: A normally closed contact connected to a coil.
- Forward_Speed.TT**: A timer coil (TON) with a preset of 45000 and an accumulated value of 37044.
- Reverse_Speed.TT**: A timer coil (TON) with a preset of 45000 and an accumulated value of 0.
- Motor_Stop**: A normally open contact connected to a coil.
- START_SAFETY_ON**: A normally open contact connected to a coil.
- Emergency_Stop**: A normally open contact connected to a coil.
- Forward_Motor_Speed**: A coil connected to a data register.
- Reverse_Motor_Speed**: A coil connected to a data register.
- Motor_Stopped**: A coil connected to a data register.

Below the ladder logic, a note states: "Note: For VFD & PLC Theory consult with your Tutor or Google it. This is only basic control mechanism of PLC , VFD & Motor through Remote-Unit."

The video on the right shows the physical hardware setup, including a VFD unit, a PLC, and a motor, with various control buttons and indicators.

VFD and motor control via PLC via remote Lab

Remote and Virtual Labs: Examples

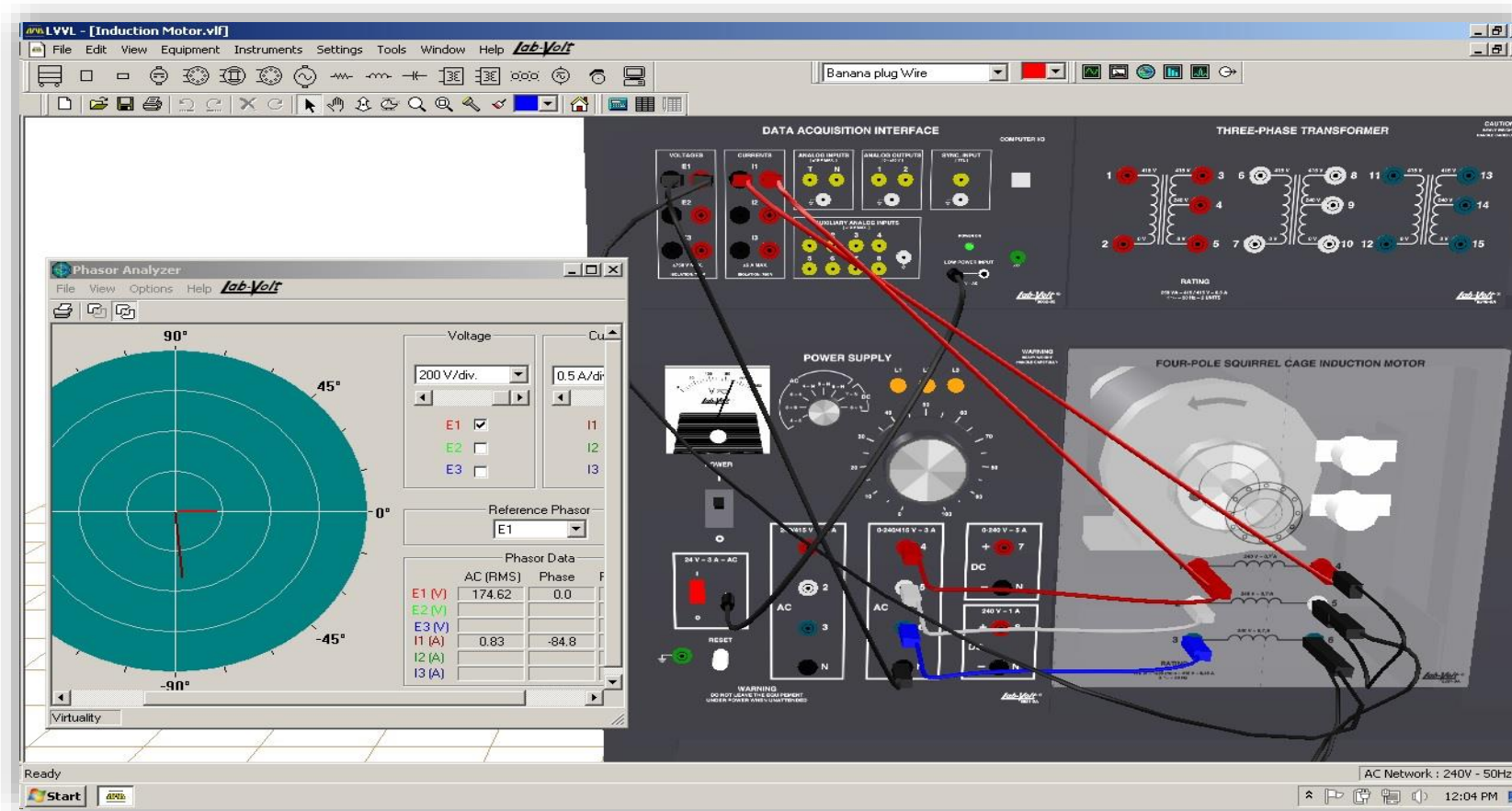
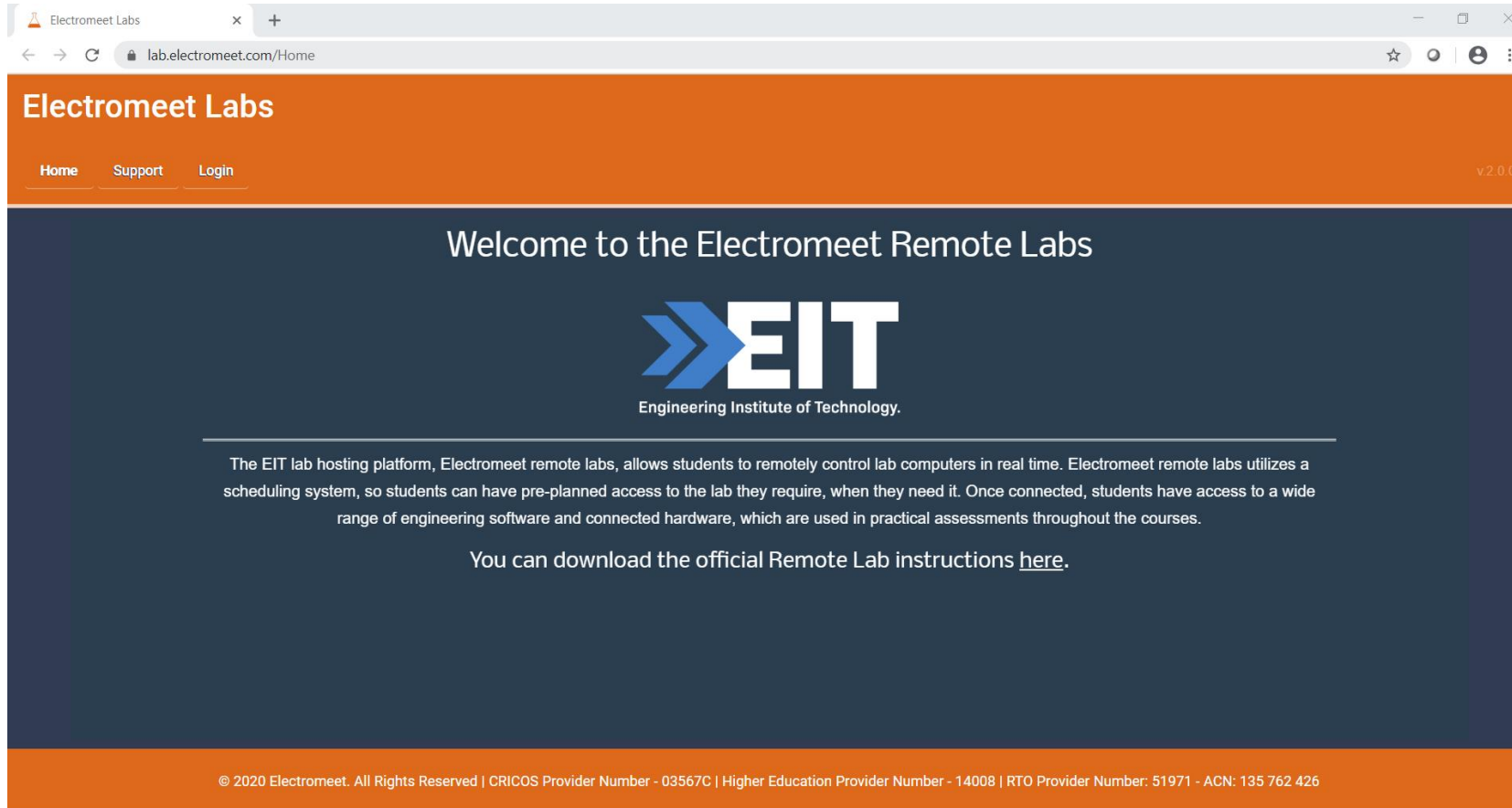


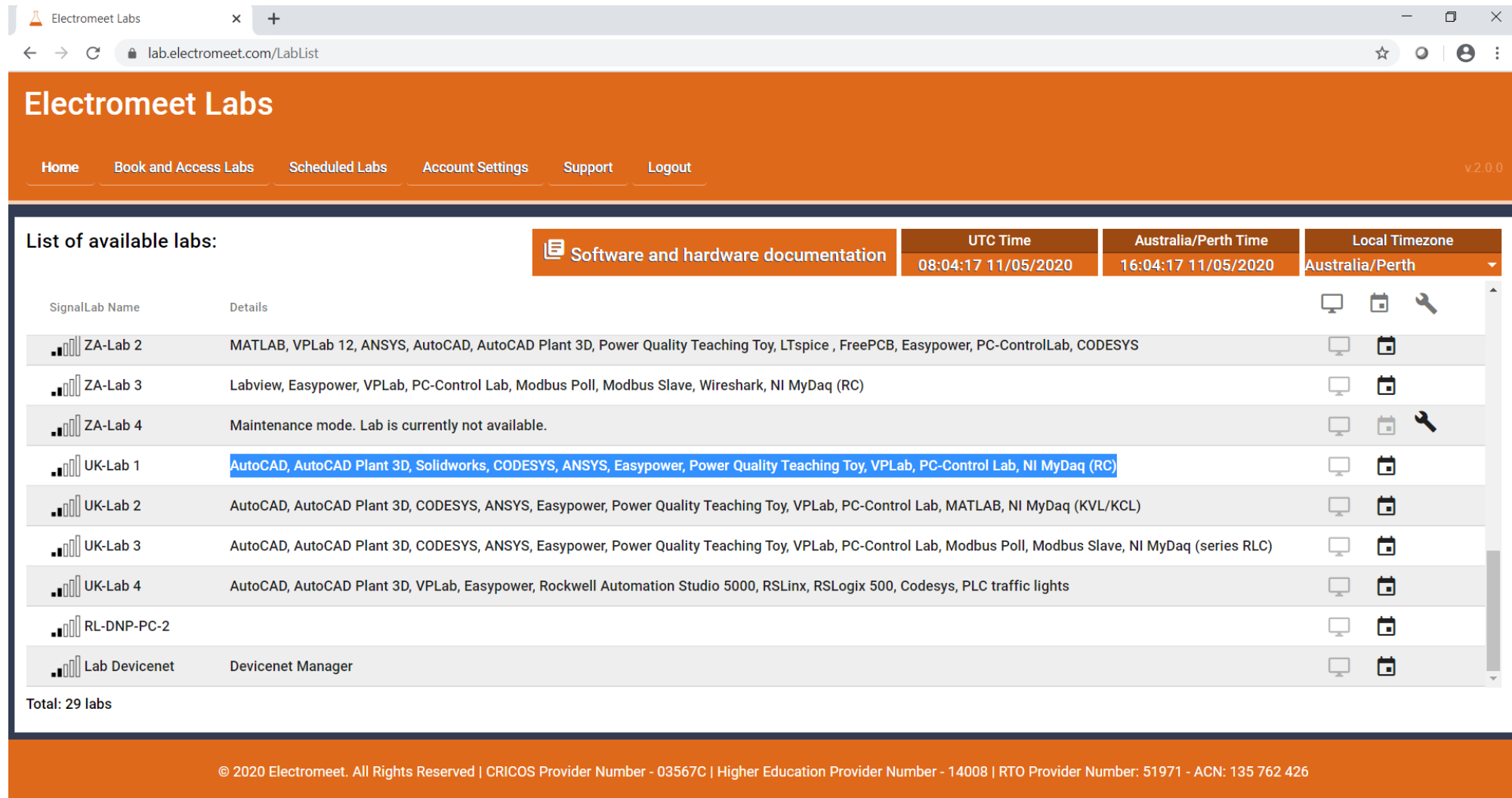
Fig: Remote Lab Practical exercise on four pole squirrel cage induction motor. Measuring phase voltage and neutral current.



The screenshot shows a web browser window with the URL `lab.electromeeet.com/Home`. The page has an orange header with the text "Electromeeet Labs" and navigation links for "Home", "Support", and "Login". The main content area is dark blue and features the EIT logo and the text "Welcome to the Electromeeet Remote Labs". Below this, a paragraph explains the platform's purpose: "The EIT lab hosting platform, Electromeeet remote labs, allows students to remotely control lab computers in real time. Electromeeet remote labs utilizes a scheduling system, so students can have pre-planned access to the lab they require, when they need it. Once connected, students have access to a wide range of engineering software and connected hardware, which are used in practical assessments throughout the courses." A link is provided to download instructions: "You can download the official Remote Lab instructions [here](#)." The footer contains copyright information: "© 2020 Electromeeet. All Rights Reserved | CRICOS Provider Number - 03567C | Higher Education Provider Number - 14008 | RTO Provider Number: 51971 - ACN: 135 762 426".

STEP 1: Login via Electromeeet with your login details.

Remote and Virtual Labs: Examples



The screenshot shows the 'Electromeeet Labs' website interface. At the top, there is a navigation bar with links for Home, Book and Access Labs, Scheduled Labs, Account Settings, Support, and Logout. The version number 'v2.0.0' is displayed in the top right corner. Below the navigation bar, the main content area is titled 'List of available labs:'. To the right of this title, there are three tabs: 'Software and hardware documentation' (selected), 'UTC Time', and 'Australia/Perth Time'. Below these tabs, there are two columns of time information: 'UTC Time' (08:04:17 11/05/2020) and 'Australia/Perth Time' (16:04:17 11/05/2020). A 'Local Timezone' dropdown menu is set to 'Australia/Perth'. The main table lists various labs with their SignalLab Name, Details, and icons for monitoring, booking, and maintenance. The 'UK-Lab 1' row is highlighted in blue, indicating it is selected. The table also includes a 'Total: 29 labs' summary at the bottom.

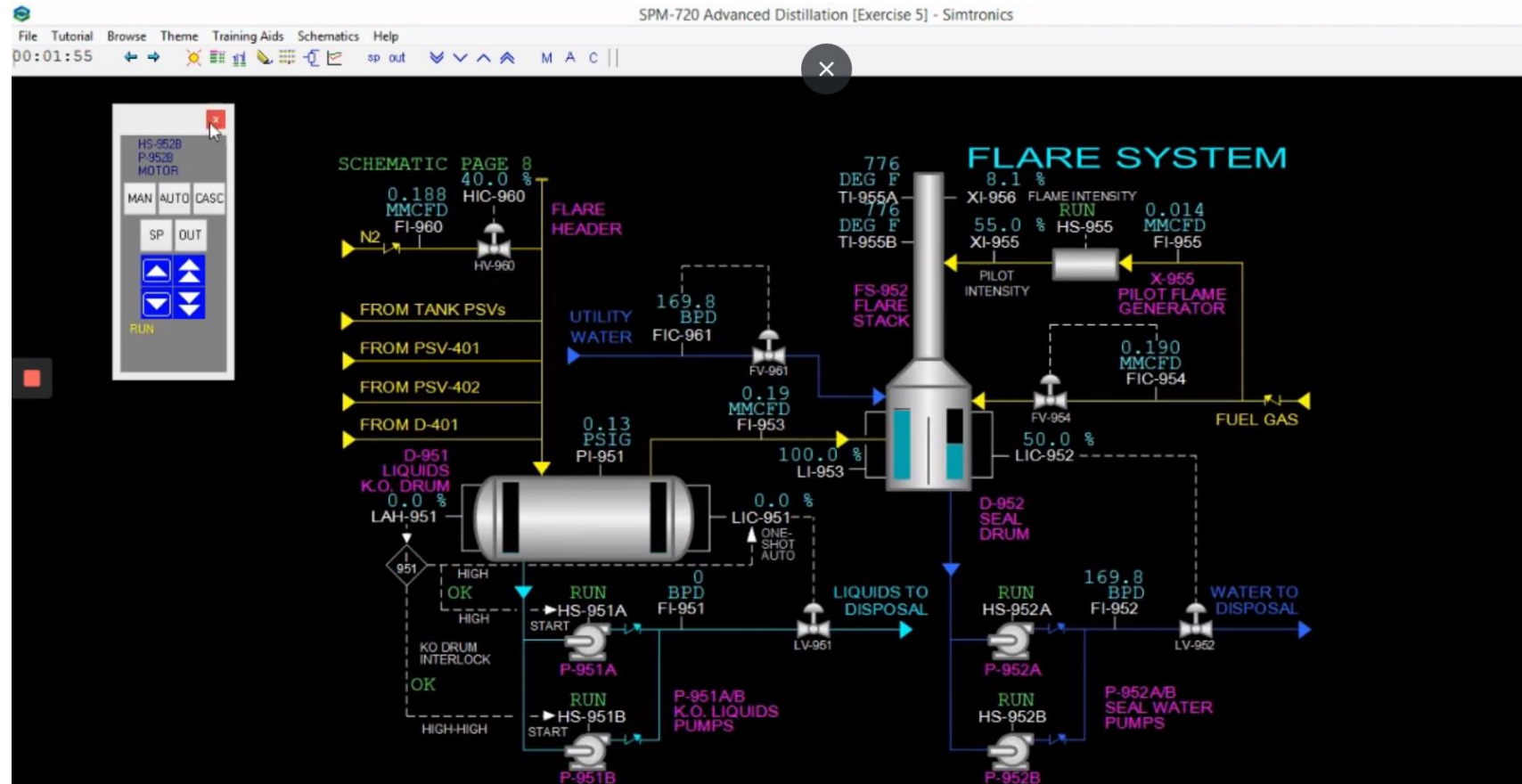
SignalLab Name	Details	Monitoring	Booking	Maintenance
ZA-Lab 2	MATLAB, VPLab 12, ANSYS, AutoCAD, AutoCAD Plant 3D, Power Quality Teaching Toy, LTspice , FreePCB, Easypower, PC-ControlLab, CODESYS			
ZA-Lab 3	Labview, Easypower, VPLab, PC-Control Lab, Modbus Poll, Modbus Slave, Wireshark, NI MyDaq (RC)			
ZA-Lab 4	Maintenance mode. Lab is currently not available.			
UK-Lab 1	AutoCAD, AutoCAD Plant 3D, Solidworks, CODESYS, ANSYS, Easypower, Power Quality Teaching Toy, VPLab, PC-Control Lab, NI MyDaq (RC)			
UK-Lab 2	AutoCAD, AutoCAD Plant 3D, CODESYS, ANSYS, Easypower, Power Quality Teaching Toy, VPLab, PC-Control Lab, MATLAB, NI MyDaq (KVL/KCL)			
UK-Lab 3	AutoCAD, AutoCAD Plant 3D, CODESYS, ANSYS, Easypower, Power Quality Teaching Toy, VPLab, PC-Control Lab, Modbus Poll, Modbus Slave, NI MyDaq (series RLC)			
UK-Lab 4	AutoCAD, AutoCAD Plant 3D, VPLab, Easypower, Rockwell Automation Studio 5000, RSLinx, RSLogix 500, Codesys, PLC traffic lights			
RL-DNP-PC-2				
Lab Devicenet	Devicenet Manager			

Total: 29 labs

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STEP 2: Book your laboratory via Electromeeet.

Remote and Virtual Labs: Examples



STEP 3: Begin and operate your laboratory.

Remote and Virtual Labs: Examples

SPM-720 Advanced Distillation [Exercise 5] - Simtronics

File Tutorial Browse Theme Training Aids Schematics Help
00:02:04

SCHMATIC PAGE 9

PROFITABILITY

DEBITS	COST	RATE	SPEND RATE	TOTAL USED	TOTAL SPENT
Plant feed	80 \$/BBL	1950 BPD	6499 \$/H	5 BBL	387 \$
Vented gas	1.40 \$/MCF	0.000 MMCFD	0 \$/H	0 MMCF	0 \$
Hot oil	3.20 \$/BBL	8449 BPD	1126 \$/H	21 BBL	67 \$
Cooling water	1.60 \$/BBL	16129 BPD	1075 \$/H	40 BBL	64 \$
Time	100 \$/HR	N/A	100 \$/H	3.6 MIN	6 \$
Off-spec heavy	16 \$/BBL	0 BPD	0 \$/H	0 BBL	0 \$
Off-spec light	16 \$/BBL	0 BPD	0 \$/H	0 BBL	0 \$
TOTALS	N/A	N/A	8800 \$/H	N/A	524 \$

CREDITS	PRICE	RATE	EARN RATE	TOTAL MADE	TOTAL EARNED
Heavy product	143 \$/BBL	787 BPD	4686 \$/H	2 BBL	280 \$
Light product	127 \$/BBL	0 BPD	0 \$/H	2 BBL	269 \$
TOTALS	N/A	N/A	4686 \$/H	N/A	549 \$

PROFIT/LOSS					
	N/A	N/A	-4114 \$/H	N/A	25 \$

STEP 3: Begin and operate your laboratory.

Remote and Virtual Labs: Examples

SPM-720 Advanced Distillation [Exercise 5] - Simtronics

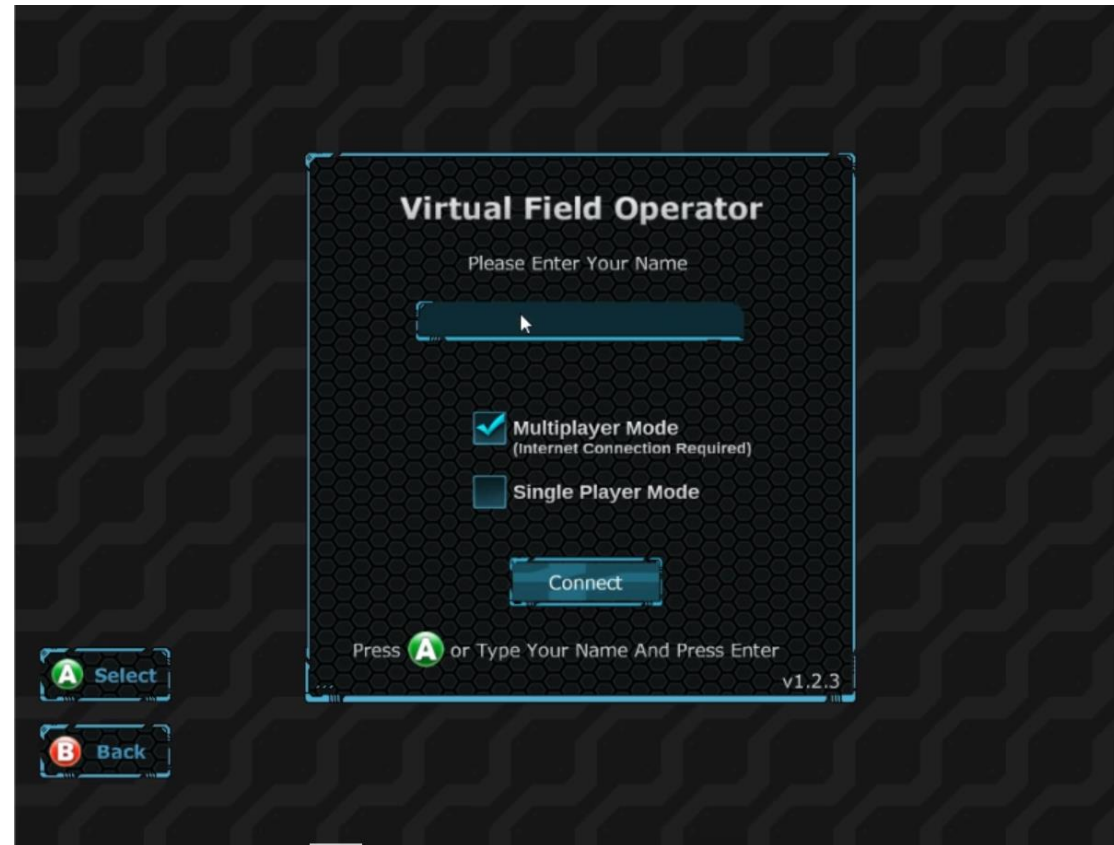
File Tutorial Browse Theme Training Aids Schematics Help

00:02:16

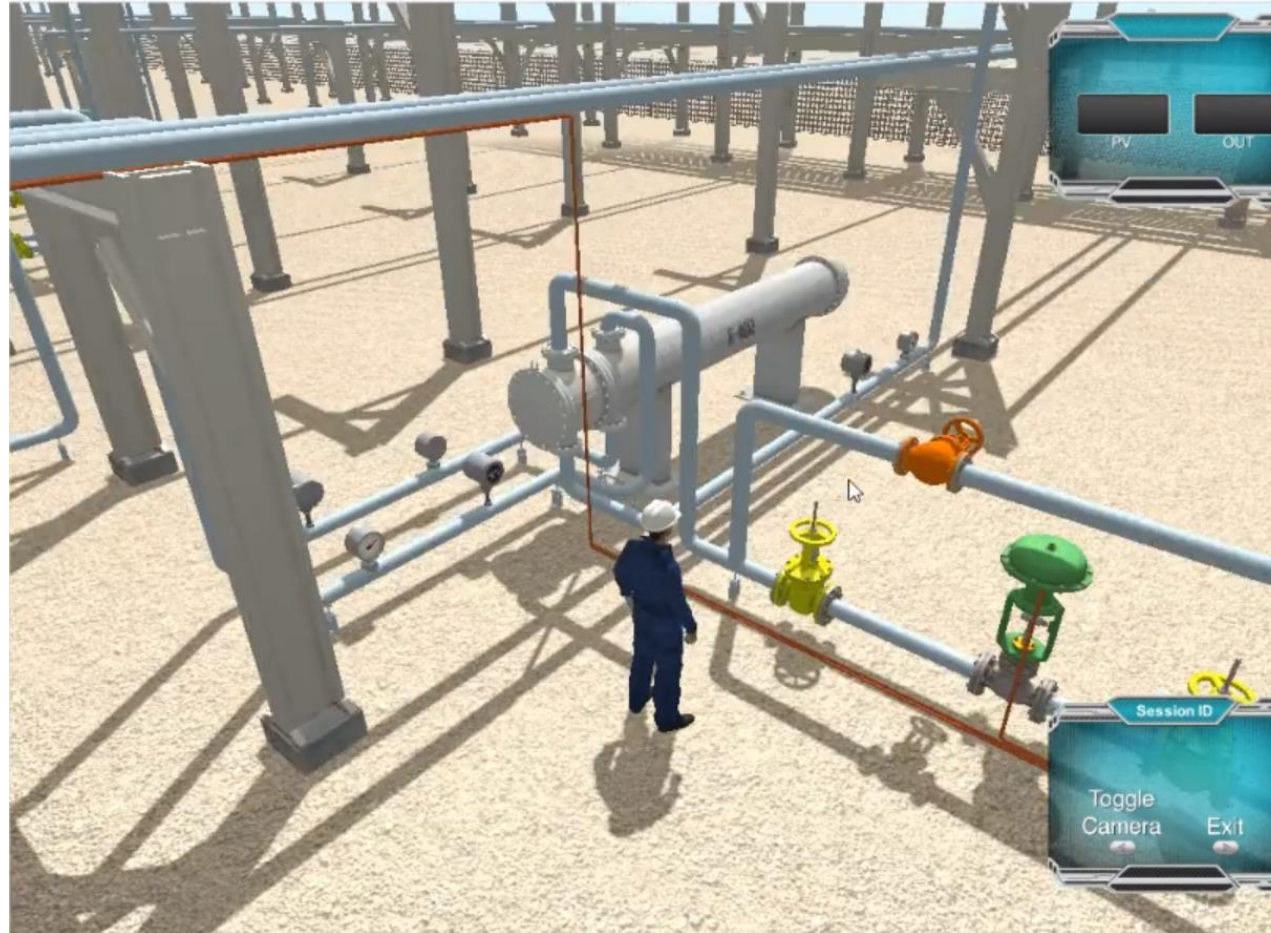
SCHEMATIC PAGE 10 **CRITICAL SAFETY PERFORMANCE**

EQUIPMENT	TAG	PV	HI ENABLED	LO ENABLED	PENALTY
V-101	LIC-101 PI-101	50.0 % 12.5 PSIG	YES YES	YES NO	0.0 0.0
T-401	LIC-411 PI-403	50.0 % 130.4 PSIG	YES YES	YES NO	0.0 0.0
E-403	TI-417	78.8 DEG F	YES	NO	0.0
E-401	TI-412	91.7 DEG F	YES	NO	0.0
D-401	LIC-412 PIC-412	50.0 % 126.0 PSIG	YES YES	YES NO	0.0 0.0
E-404	TI-418	81.8 DEG F	YES	NO	0.0
V-901	LIC-901 PI-911	52.9 % 25.6 PSIG	YES YES	NO NO	0.0 0.0
V-902	LIC-902 PI-912	50.0 % 0.0 PSIG	YES YES	YES NO	0.0 0.0
V-903	LIC-903 PI-913	50.4 % 0.0 PSIG	YES YES	NO NO	0.0 0.0
D-951	LAHH-951 FI-960	0.0 % 0.188 MMCFD	YES NO	NO YES	0.0 0.0
D-952	LI-953 LIC-952	100.0 % 48.0 %	NO YES	YES YES	0.0 0.0
FS-952	XI-955	54.9 %	NO	YES	0.0
TOTAL					0.0

STEP 3: Begin and operate your laboratory.

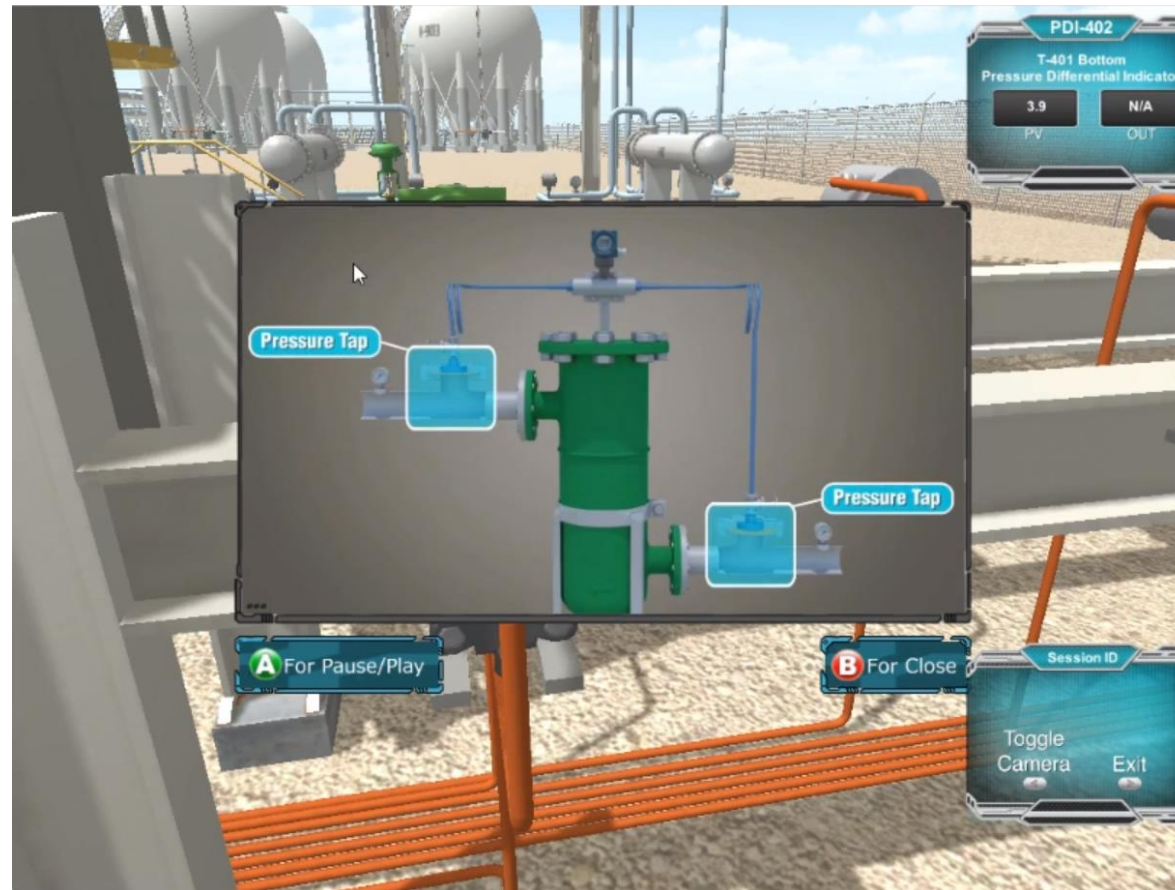


STEP 4: Continue into the simulation via the virtual laboratory.



STEP 5: Virtually walk around the plant.

Remote and Virtual Labs: Examples



STEP 5: Virtually walk around the plant and ensure the plant equipment is operating efficiently and safely.



Mildred Nanono was EIT's 2020 Student Ambassador.

- She was a Graduate of EIT's Master of Engineering (Industrial Automation) degree.
- Currently working at Eskom Uganda Limited as a Control and Instrumentation Engineering
- Featured in Sunday Vision's Top 40 under 40 for Engineering
- Advocate for people with hearing impairment and Women in STEM

"The simulations felt real. It felt like I was physically in the lab."

Demonstrations

A construction worker wearing a white hard hat and a high-visibility safety vest is shown in profile, looking down at a laptop computer. The background is a blurred construction site with scaffolding and structural elements. The entire image has a blue color overlay.



Hands-on Workshops and WIL

Hands-on Workshops

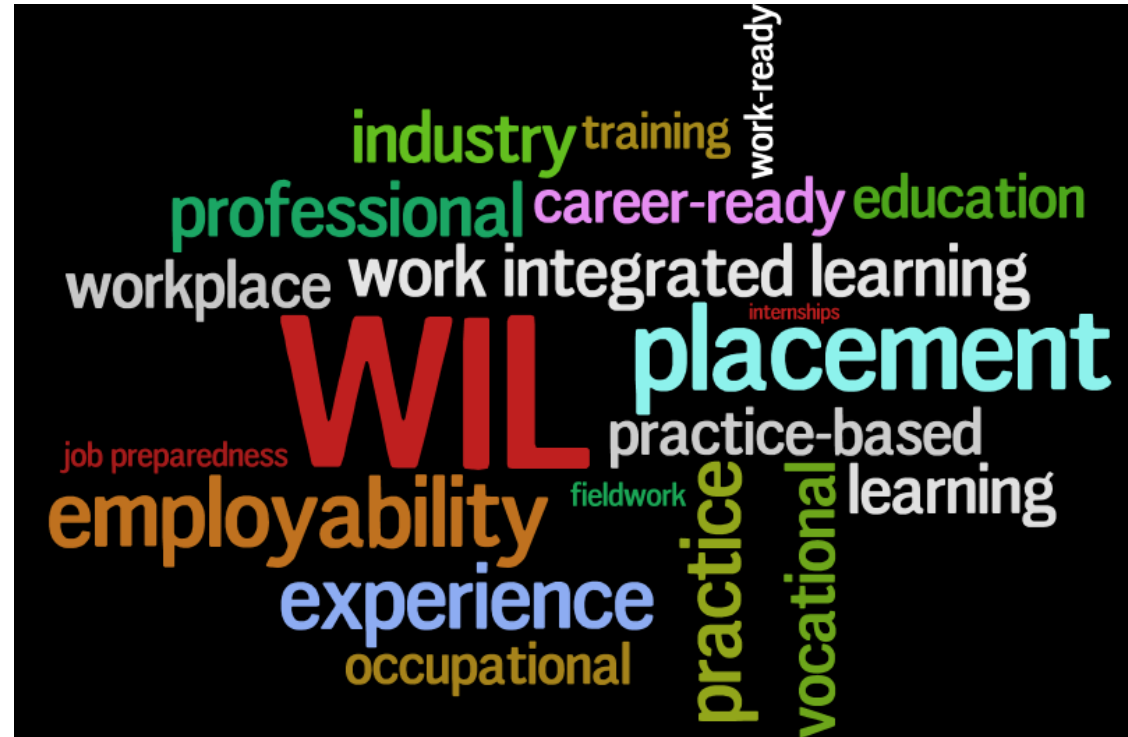


WEEK	WORKSHOPS		
1	Measurement Science (BCS, BEE, BIA, BME)		
2	Mechanics and Assembly (BCS, BME)	Power and Control (BEE, BIA)	
3	Construction and Surveying (BCS)	Transmission and Protection(BEE)	Process Plant (BME, BIA)
4	Industrial Design Workshop / Professional practice workshop		

Hands-on Workshops



Work Integrated Learning (WIL)



Why is Industrial Experience Important?



Exposure to real working environments



Engineering on the field



Trying something new



Personal development



Opportunity to showcase your talents, commitment, and value



Enhance CV through relevant experience

Zero credit units - EA accreditation:

Stage 1 Competency Elements - Engineering Application Ability

- BSC110& BSC210C - **Industrial Experience 1 & 2** - 240 hours of engineering work experience (6 weeks equivalent)
- BXX001-004C - **Hands-on workshop**
- MXX001: Professional Practice - **Hands-on workshop**
- MXX510 - **Professional Experience** - 240 hours of engineering work experience (6 weeks equivalent)

1. Internship-Scholarship

<https://www.eit.edu.au/how-to-apply/scholarships/engineering-internship-scholarship-on-campus/>

2. Internships

<https://outcome.life/internship-program/>

3. Conferences

<https://www.events.idc-online.com/>

4. Engineers Australia Events

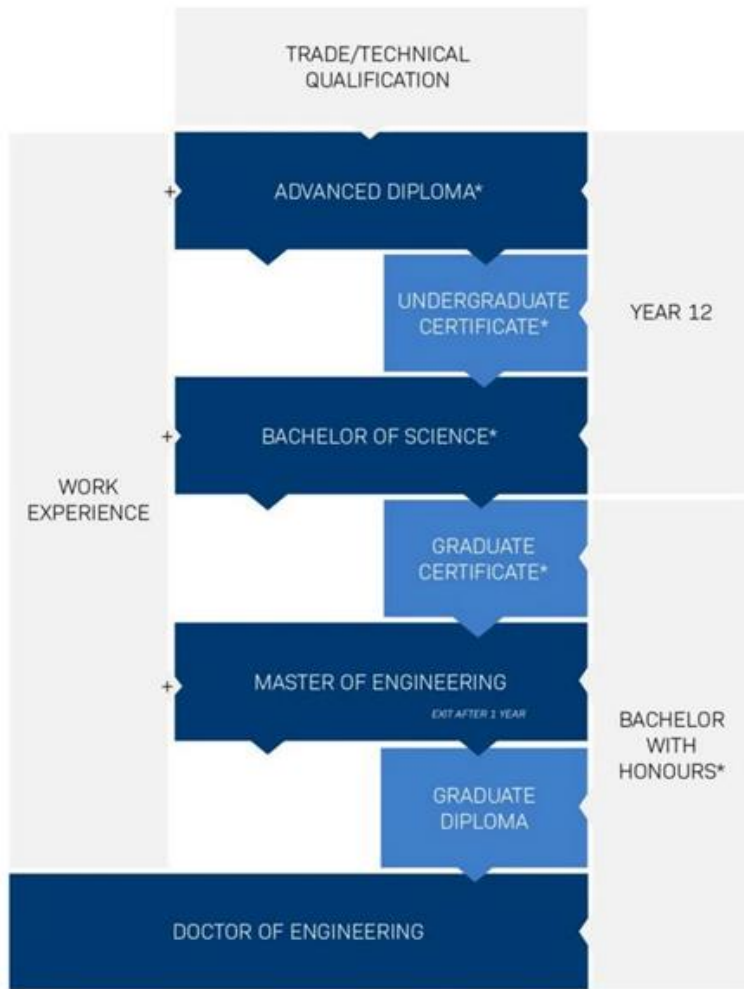
Free Student Membership

5. Guest Lecturers

Industry connection

Studying at EIT





* In a congruent field

Professional Certificate of Competency

3-month, non-accredited courses that provides professional development in specific areas of interest

Diploma

12-month Diploma of Leadership and Management

Advanced Diplomas

18 - 24-month Advanced Diplomas for those wanting to formalise trade qualifications/relevant work experience

Undergraduate Certificate

6-month full time (or part time equivalent) undergraduate qualification containing 4 units

Bachelor of Science

3 years full time (or part time equivalent)

Graduate Certificate

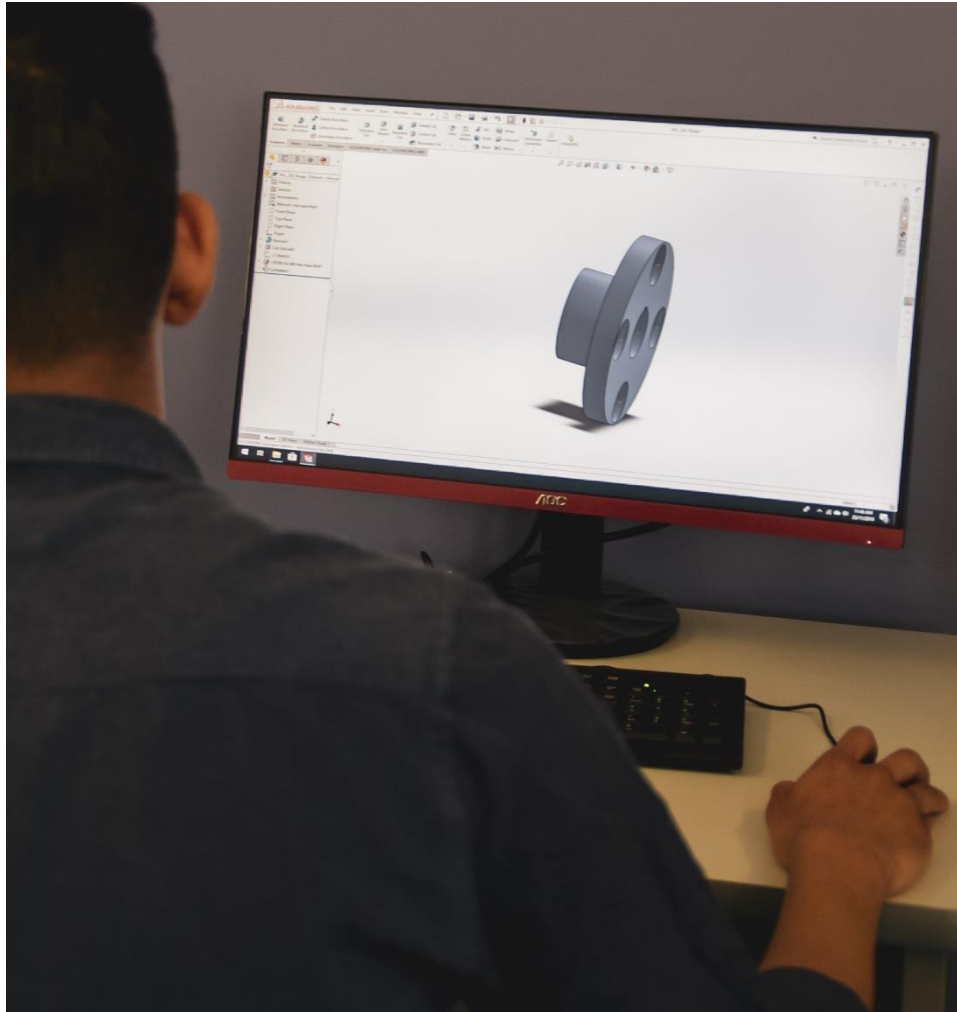
Upskill in 6 months full time (or part time equivalent) with a short postgraduate qualification containing 4 units

Master of Engineering

2 years part time intensive

Doctor of Engineering

Make your own contribution to the wider body of professional engineering knowledge and solve industry problems.



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

Our Online Learning Methodology

Our unique online delivery methodology makes use of:

- Live and interactive tutorials
- An international pool of expert lecturers
- Dedicated learning support officers, and
- State-of-the-art technologies such as hands-on workshops, remote and virtual laboratories, and simulation software



"As an LSO it is rewarding to start a course then follow, encourage and support the students through to the end and see them achieve their qualification."

Sharon Bowler
VET LSO



"As an LSO I love supporting our students on their learning journey and ensuring their experience with EIT is a positive and rewarding one"

Emily Levy
Higher Education LSO

- ▶ Learning Support Officers (LSOs) are in addition to the academic support (instructors/lecturers).
- ▶ LSOs guide the students from the onboarding process through to graduation.
- ▶ LSOs are the support, encouragement and go-to person for any question relating to a student's studies.
- ▶ One LSO is dedicated to the student for the duration of either a professional certificate or VET program.
- ▶ One LSO is dedicated to each unit in Higher Education studies at EIT.
- ▶ EIT has LSOs based in: *South Africa, Switzerland, Zimbabwe, New Zealand and Australia.*



Data Communication - The Backbone of Industrial Automation

Technical Topic Webinar

2.00PM - 3.00PM (AWST)
Friday 27 August 2021

[Register Now](#)

CRICOS Provider Number: 03567C | Higher Education Provider Number: 14008 | RTO Provider Number: 51971



Recent Trends in Evaluation and Monitoring of Existing Concrete Structures

Technical Topic Webinar

3.00PM - 4.00PM (AWST)
Wednesday 8 September 2021

[Register Now](#)

CRICOS Provider Number: 03567C | Higher Education Provider Number: 14008 | RTO Provider Number: 51971



Please see our events page: <https://www.eit.edu.au/news-events/events/>

Q&A





Engineering Institute of Technology.

Thank you for attending.

Contact Us



Website

www.eit.edu.au



Head Office

1031 Wellington Street West Perth
Perth, WA 6005



Phone

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



Email

webinars@eit.edu.au

