sarawak energy



Technical Learning Directory 2027

Empowering Growth | Shaping a Sustainable Future

About the Technical Learning Directory

Continuous learning is a foundational part of working at or with Sarawak Energy.

As we strengthen our position as a regional renewable energy powerhouse, we remain committed to pursuing excellence across all aspects of our business. Central to this ambition is a culture of continuous improvement, where our people are empowered to develop their skills and enhance their capabilities.

To support this, Sarawak Energy offers a range of technical learning programmes for our employees and contractors, facilitated by subject matter experts, specialists and experienced industry practitioners.

This directory provides an overview of these programmes, allowing readers to identify relevant learning opportunities and plan their professional development throughout the year.

I encourage everybody to take the time to explore this directory and take full advantage of the programmes available to strengthen their competencies and contribute to our collective success.

Together, let us continue to make Sarawak Energy beyond great.

Christina Lai Nien Yien
General Manager
Learning & Development and Capability Management



Table of Contents

Programme Schedule 2027

Introducing the Programme Schedule 2027 5
Electrical Inspectorate Unit (EIU) Programme 6 - 7
Competency and Authorisation Committee (CAC) Programme 8 - 9
Safety Programme 10 - 11

Mechanical Programme 12
General Programme 13
Theory Exams for EIU & CAC Programme 14
Practical Exams for EIU & CAC Programme 15

Appendix 1: Programme Details 16 - 39

Appendix 2: Training Matrix 2027 40 - 42



Programme Schedule 2027

Table of Contents

Introducing the Programme Schedule 2027

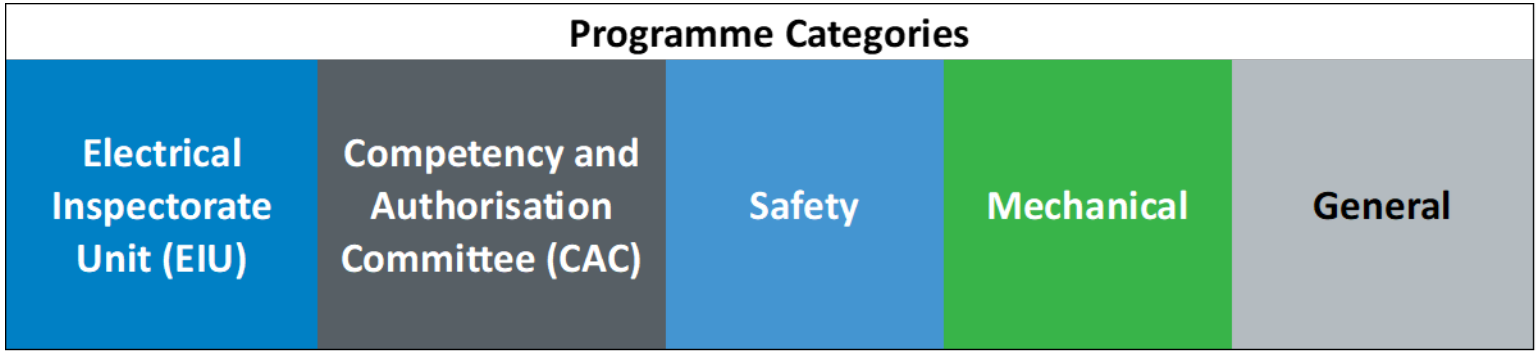
The tables below provide a comprehensive overview of all programmes that are offered throughout 2027. The number of sessions for each programme is determined based on business needs. These programmes enhance technical capabilities, enabling attending employees and contractors to better contribute to Sarawak Energy's projects and operations.

Each programme's theory (T) and practical (P) sessions are scheduled sequentially. Practical sessions are only open to participants who have completed the corresponding theory session. No separate registration is required, as eligible participants will be automatically assigned to a practical session by the programme administrator.

Employees will be able to register through the links in the tables.

Non-employees will have to register for the listed programmes and exams via the QR code on this page.

If all planned sessions for a particular programme are full, **employees** may still register via the Learning Management System (LMS) in the Sarawak Energy People System (SEPS) to be placed on a corresponding waitlist.



Colour Coding Legend

Registration for external participants (non-employees)

Electrical Inspectorate Unit (EIU) Programmes

Code	EIU Programme Title	No. of Days		SEPS Link	Jan – Feb	Mar – Apr	May – Jun	Jul – Aug	Sept – Oct	Nov – Dec
		Theory (T)	Practical (P)							
E211	Chargeman L1 Module 1	3	-	Link		T: 5 - 7 Apr		T: 5 - 7 Jul	T: 1 - 3 Sept	
E212	Chargeman L1 Module 2	2	-	Link		T: 8 - 9 Apr		T: 8 - 9 Jul	T: 6 - 7 Sept	
E213	Chargeman L1 Module 3	2	2	Link		T: 12 - 13 Apr P: 15 - 16 Apr		T: 12 - 13 Jul P: 15 - 16 Jul	T: 8 - 9 Sept P: 13 - 14 Sept	
E223	Chargeman L2 Overhead Lines	2	2	Link	T: 7 - 8 Jan P: 14 - 15 Jan / 18 - 19 Jan	T: 29 - 30 Mar P: 5 - 6 Apr / 7 - 8 Apr	T: 17 - 18 Jun P: 21 - 22 Jun / 24 - 25 Jun	T: 9 - 10 Aug P: 17 - 18 Aug / 19 - 20 Aug		T: 1 - 2 Nov P: 4 - 5 Nov / 8 - 9 Nov
E604	Chargeman L2 & H2 U/G Cable Laying	2	1	Link		T: 12 - 13 Apr P: 20/21/22 Apr	T: 28 - 29 Jun P: 5/6/7 Jul		T: 11 - 12 Oct P: 19/20/21 Oct	
E703	Chargeman L3 Generators & Synchronising	2	1	Link	T: 18 - 19 Jan P: 21/22 Jan		T: 3 - 4 May P: 6/7 May		T: 4 - 5 Oct P: 7/8 Oct	

Note: Employees can register for these programmes through the links provided. Non-employees must register through the QR code provided on page 5. Please note that for certain programmes, participants from one theory session may be divided into two separate practical sessions on different dates.

Electrical Inspectorate Unit (EIU) Programmes

Code	EIU Programme Title	No. of Days		SEPS Link	Jan – Feb	Mar – Apr	May – Jun	Jul – Aug	Sept – Oct	Nov – Dec
		Theory (T)	Practical (P)							
E521	Chargeman H1 Module 1	4	-	Link		T: 19 - 22 Apr		T: 19 - 22 Jul		
E522	Chargeman H1 Module 2	4	-	Link		T:26 - 29 Apr		T: 26 - 29 Jul		
E523	Chargeman H1 Module 3	4	-	Link			T: 3 - 6 May	T: 2 - 5 Aug		
E524	Chargeman H1 Module 4	3	1	Link			T: 10 - 12 May P: 18/19 May	T: 9 - 11 Aug P: 17/18 Aug		
E405	Chargeman H2 Overhead Lines	2	1	Link	T: 4 - 5 Jan P: 11/12 Jan			T: 8 - 9 Jul P: 15/16 Jul	T: 27 - 28 Sept P: 4/5 Oct	
E602	11 kV Underground Cable-Jointing	1	2	Link	T: 13 Jan P: 28 - 29 Jan	T: 19 Apr P: 26 - 27 Apr				
E603	33 kV Underground Cable-Jointing	1	2	Link		T: 19 Mar P: 24 - 25 Mar		T: 11 Aug P: 26 - 27 Aug		

Note: Employees can register for these programmes through the links provided. Non-employees must register through the QR code provided on page 5. Please note that for certain programmes, participants from one theory session may be divided into two separate practical sessions on different dates.

Competency and Authorisation Committee (CAC) Programmes

Code	CAC Programme Title	No. of Days		SEPS Link	Jan – Feb	Mar – Apr	May – Jun	Jul – Aug	Sept – Oct	Nov – Dec
		Theory (T)	Practical (P)							
E200	Low Voltage Distribution System Practices and Switching	2	1	Link		T: 22 - 23 Mar P: 31 Mar / 1/2 Apr	T: 13 - 14 May P: 18/19/21 May	T: 12 - 13 Aug P: 23/24/25 Aug	T: 7 - 8 Sept P: 13/14/15 Sept	T: 10 - 11 Nov P: 12/18/19 Nov
E202	LV Fuse Switching	1	1	Link					T: 18 Oct P: 29 Oct	
E500	11 kV Switching	3	1	Link	T: 25 - 27 Jan P: 29 Jan	T: 5 - 7 Apr P: 9 Apr	T: 21 - 23 Jun P: 25 Jun		T: 20 - 22 Sept P: 24 Sept	T: 1 - 3 Nov P: 5 Nov
E502	Switching for Major Power Stations	3	-	Link		T: 22 - 24 Mar				
E503	33 kV Switching	3	-	Link		T: 29 - 31 Mar		T: 7 - 9 Jul	T: 25 - 27 Oct	
E505	Refresher For HV Switching	2	-	Link		T: 1 - 2 Apr		T: 12 - 13 Aug	T: 7 - 8 Oct	

Note: Employees can register for these programmes through the links provided. Non-employees must register through the QR code provided on page 5. Please note that for certain programmes, participants from one theory session may be divided into two separate practical sessions on different dates.

Competency and Authorisation Committee (CAC) Programmes

Code	CAC Programme Title	No. of Days		SEPS Link	Jan – Feb	Mar – Apr	May – Jun	Jul – Aug	Sept – Oct	Nov – Dec
		Theory (T)	Practical (P)							
E511	132/275 kV Switching	4	-	Link		T: 22 - 25 Mar				T: 8 - 11 Nov
E506	Refresher for 132/275 kV Switching	3	-	Link			T: 15 - 17 Jun			
E222	Overhead Live Lines Works	1	1	Link			T: 3 May P: 5/6/7 May		T: 20 Sept P: 22/23/24 Sept	
E514	Street Lighting Maintenance	1	-	Link			T: 4 May			
E808	Distribution Protection Control & Instrumentation	2	-	Link		T: 24 - 25 Mar				
E809	Transmission Protection Control & Instrumentation	2	-	Link		T:31 Mar - 1 Apr				

Note: Employees can register for these programmes through the links provided. Non-employees must register through the QR code provided on page 5. Please note that for certain programmes, participants from one theory session may be divided into two separate practical sessions on different dates.

Safety Programmes

Code	Safety Programme Title	No. of Days		SEPS Link	Jan – Feb	Mar – Apr	May – Jun	Jul – Aug	Sept – Oct	Nov – Dec
		Theory (T)	Practical (P)							
S100	First-Aid Programme in Kuching	1	2	Link	T: 18 Jan P: 19 - 20 Jan T: 15 Feb P: 16 - 17 / 18 - 19 Feb	T: 15 Mar P: 16 - 17 Mar / 18 - 19 Mar T: 19 Apr P: 20 - 21 Apr/ 22 - 23 Apr	T: 24 May P: 25 - 26 May / 27 - 28 May T: 16 Jun P: 17 - 18 Jun	T: 5 Jul P: 6 - 7 Jul T: 2 Aug P: 3 - 4 Aug / 5 - 6 Aug	T: 6 Sept P: 7 - 8 Sept / 9 - 10 Sept T: 4 Oct P: 5 - 6 Oct	T: 1 Nov P: 2 - 3 Nov T: 6 Dec P: 7 - 8 Dec
	First-Aid Programme in Sibu					T: 29 Mar P: 30 - 31 Mar		T: 12 Jul P: 13 - 14 Jul	T: 11 Oct P: 12 - 13 Oct	
	First-Aid Programme in Bintulu				T: 11 Jan P: 12-13 Jan T: 22 Feb P: 23 - 24 Feb		T: 3 May P: 4 - 5 May	T: 17 Aug P: 18 - 19 Aug		T: 8 Nov P: 9 - 10 Nov
	First-Aid Programme in Miri					T: 5 Apr P: 6 - 7 Apr		T: 19 Jul P: 20 - 21 Jul		

Note: Employees can register for these programmes through the links provided. Non-employees must register through the QR code provided on page 5. Please note that for certain programmes, participants from one theory session may be divided into two separate practical sessions on different dates.

Safety Programmes

Code	Safety Programme Title	No. of Days		SEPS Link	Jan – Feb	Mar – Apr	May – Jun	Jul – Aug	Sept – Oct	Nov – Dec
		Theory (T)	Practical (P)							
S200	Safety Awareness for Working Near Electrical Installations	1	-	Link		T: 9 Apr		T: 3 Aug		
S300	Safety Awareness for Working Near Power Stations (Electrical)	1	-	Link		T: 1 Apr				
S401	Safety Awareness for Working Near 33/11 kV Overhead Lines	1	-	Link			T: 16 Jun	T: 28 Jul		
S402	Safety Awareness for Working Near EHV Transmission Lines	1	-	Link					T: 21 Sept	
S500	Safety Awareness for Working Near Substations	1	-	Link			T:14 Jun		T: 27 Sept	
S501	Safety Awareness for Working Near EHV Substation	1	-	Link			T: 12 May			
S702	Distribution Working at Height	1	1	Link					T: 6 Sept P: 9/10 Sept	

Note: Employees can register for these programmes through the links provided. Non-employees must register through the QR code provided on page 5. Please note that for certain programmes, participants from one theory session may be divided into two separate practical sessions on different dates.

Mechanical Programmes

Code	Mechanical Programme Title	No. of Days		SEPS Link	Jan – Feb	Mar – Apr	May – Jun	Jul – Aug	Sept – Oct	Nov – Dec
		Theory (T)	Practical (P)							
SBO	Steam Boiler Operator	4	1	Link	T: 8 - 10 & 12 Feb P: 11 Feb	T: 5 - 7 & 9 Apr P: 8 Apr	T: 28 - 30 Jun & 2 Jul P: 1 Jul		T: 6 - 8 & 10 Sept P: 9 Sept	
SBE2	Steam Boiler Engineer Grade 2	4	1	Link			T: 10 - 12 & 14 May P: 13 May	T: 26 - 28 & 30 Jul P: 29 Jul		

Note: Employees can register for these programmes through the links provided. Non-employees must register through the QR code provided on page 5. Please note that for certain programmes, participants from one theory session may be divided into two separate practical sessions on different dates.

General Programmes

Code	General Programme Title	No. of Days		SEPS Link	Jan – Feb	Mar – Apr	May – Jun	Jul – Aug	Sept – Oct	Nov – Dec
		Theory (T)	Practical (P)							
E206	Low Voltage Main Switchboard Requirement & Testing	2	-	Link				T: 26 - 27 Aug		
E209	Electrical Power System Fundamentals for Non-Technical Personnel	2	-	Link				T: 3 - 4 Aug		
E225	Meter Inspection, Installation and Disconnection	1	-	Link					T: 6 Sept	
E509	Substation Routine Maintenance	2	-	Link				T: 12 - 13 Jul		
E406	High Voltage Overhead Lines Testing & Commissioning	1	1	Link				T: 2 Aug P: 5/6 Aug		
E904	Introduction to Sarawak Energy Power System Module 2: Cables and Lines	2	-	Link				T: 26 - 27 Jul		
E905	Introduction to Sarawak Energy Power System Module 3: Generators and Protection	2	-	Link				T: 29 - 30 Jul		
E906	Introduction to Sarawak Energy Power System Module 4: High Voltage Systems	2	-	Link				T: 2 - 3 Aug		

Note: Employees can register for these programmes through the links provided. Non-employees must register through the QR code provided on page 5. Please note that for certain programmes, participants from one theory session may be divided into two separate practical sessions on different dates.

Theory Examinations for EIU & CAC Programmes

Code	Theory Examination Title	No. of Days	SEPS Link	Jan – Feb	Mar – Apr	May – Jun	Jul – Aug	Sept – Oct	Nov – Dec
T-EOER	Electricity Ordinance & Electricity Rules	1	Link		3 Mar	5 May	7 Jul	8 Sept	3 Nov
T-A	Chargeman L1	1	Link		3 Mar	5 May	7 Jul	8 Sept	3 Nov
T-A2	Chargeman L2 Overhead Lines	1	Link		3 Mar	5 May	7 Jul	8 Sept	3 Nov
T-LHUG	Chargeman L2 & H2 U/G Cable Laying	1	Link	27 Jan	7 Apr	16 Jun	4 Aug	6 Oct	8 Dec
T-L3	Chargeman L3 Generators & Synchronising	1	Link	27 Jan	7 Apr	16 Jun	4 Aug	6 Oct	8 Dec
T-H	Chargeman H1	1	Link	27 Jan	7 Apr	16 Jun	4 Aug	6 Oct	8 Dec
T-A3	Chargeman H2 Overhead Lines	1	Link	27 Jan	7 Apr	16 Jun	4 Aug	6 Oct	8 Dec
T-G	Grading of 11 kV Cable Jointers	1	Link	27 Jan	7 Apr	16 Jun	4 Aug	6 Oct	8 Dec
T-G33	Grading of 33 kV Cable Jointers	1	Link		3 Mar	5 May	7 Jul	8 Sept	3 Nov
T-OLL	Overhead Live Lines Works	1	Link		3 Mar	5 May	7 Jul	8 Sept	3 Nov

Note: Employees can register for these programmes through the links provided. Non-employees must register through the QR code provided on page 5. Please note that for certain programmes, participants from one theory session may be divided into two separate practical sessions on different dates.

Practical Examinations for EIU & CAC Programmes

Code	Practical Examination Title	No. of Days	SEPS Link	Jan – Feb	Mar – Apr	May – Jun	Jul – Aug	Sept – Oct	Nov – Dec
P-A	Chargeman L1	1	Link		21/22/23 Apr		26/27/28 Jul	29/30 Sept 1 Oct	
P-A2	Chargeman L2 Overhead Lines	1	Link	25/26/27 Jan	14/15/16 Apr	30 Jun	1/2 Jul	1/2/3 Sept	15/16/17 Nov
P-LHUG	Chargeman L2 & H2 U/G Cable Laying	1	Link		28/29/30 Apr		12/13/14 Jul	25/26/27 Oct	
P-L3	Chargeman L3 Generators & Synchronising	1	Link	25/26/27/28 Jan		11/12/13/14 May		12/13/14/15 Oct	
P-H	Chargeman H1	1	Link			24/25/26 May		23/24/25 Aug	
P-A3	Chargeman H2 Overhead Lines	1	Link	20/21/22 Jan			19/20/21 Jul	13/14/15 Oct	
P-G	Grading of 11 kV Cable Jointers	2	Link				29 - 30 Jul		22 - 23 Nov
P-G33	Grading of 33 kV Cable Jointers	2	Link					7 - 8 Oct	23 - 24 Nov
P-OLL	Overhead Live Lines Works	1	Link			10/11/12 May		29/20 Sept 1 Oct	

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Appendix 1: Programme Details



Chargeman L1 Module 1

E211

3 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of statutory requirements, electrical terminology, and firefighting equipment – becoming qualified to sit for the EIU Chargeman L1 examination.

Target Groups

Technical personnel who intend to apply for the EIU Chargeman L1 certification.

Contents

- The Electricity Rules, 1999
- Fire Fighting Systems
- Scope, Objectives, and Fundamental Requirements for Safety
- General Requirements for Earthing and Bonding
- Isolation and Switching
- Safety and Protection Measures
- Inspection and Testing
- Sizing of Conductors

Chargeman L1 Module 2

E212

2 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of customer installations, related equipment, cables and their applications, as well as air-conditioning and street lighting systems – qualifying them to sit for the EIU Chargeman L1 examination.

Target Groups

Technical personnel who intend to apply for the EIU Chargeman L1 certification.

Contents

- Consumer Installation
- Electrical Measuring and Testing Equipment
- Air Conditioner
- Protective Equipment for Low Voltage Installations
- Street Lighting
- Cables and Applications

Chargeman L1 Module 3

E213

4 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of batteries, the operation and maintenance of main switchboards, and motor control equipment. They will also engage in practical exercises focused on installing various types of motor starters – qualifying them to sit for the EIU Chargeman L1 examination.

Target Groups

Technical personnel who intend to apply for the EIU Chargeman L1 certification.

Contents

- Overview of:
  - Batteries
  - Main Switchboard Equipment Checking
  - Transformers
  - Motor and Controlling Equipment
- Practical Exercises

Chargeman L2 Overhead Lines

E223

4 Days

Learning Outcomes

By completing this programme, participants will enhance their knowledge of low-voltage overhead line requirements in accordance with relevant regulations, qualifying them to apply for the EIU Chargeman L2 Overhead Lines examination.

Target Groups

Linesmen with at least two years of working experience who intend to apply for the EIU Chargeman L2 Overhead Lines Certification.

Contents

- Overview of OSHA (Amendment) Act 2022
- The Electricity Rules, 1999
- Sarawak Energy Electrical Safety Rules
- Overhead Construction and Design Manual
- Various Operational and Safety Procedures and Processes
- Safety Practices for Working at Height Using Extension Ladders and Pole Top Rescue

Chargeman L2 & H2 Underground Cable Laying

E604

3 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of Sarawak Energy's cable laying standards and requirements – qualifying them to sit for the EIU Chargeman L2 and H2 Underground Cable-Laying examinations.

Contents

- Types of Underground Cables
- Procedures and Requirements for the Laying of High and Low Voltage Cables
- Direct Laid and Duct Laid Systems
- Cable Sealing Methods
- Sarawak Energy's Standard Cable Trenches, Joint Pit and Cable Markers

Target Groups

Technical personnel involved in projects with or maintenance of underground cables who intend to apply for EIU Chargeman L2 & H2 cable laying certification.

Chargeman L3 Generators and Synchronising

E703

3 Days

Learning Outcomes

By completing this programme, participants will gain theoretical and practical knowledge of generator operations and synchronising – qualifying them to sit for the EIU Chargeman L3 examination.

Contents

- Overview of:
  - Statutory and Safety Requirements
  - Generators and Power System Operations
- Practical Exercises

Target Groups

Technical personnel who operate or maintain generators who intend to apply for EIU Chargeman L3 certification.

Chargeman H1 Module 1

E521

4 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of statutory requirements and safety practices for high-voltage installations, substations, and substation accessories – qualifying them to sit for the EIU Chargeman H1 examination.

Contents

- Relevant Statutory Requirements and Safety Rules
- Different Types of HV Substation
- Safety Practices for HV Equipment
- Fire Fighting System
- Remote Supervisory System
- SCADA System

Target Groups

Technical personnel who hold an EIU Chargeman L1 certificate and intend to apply for an EIU Chargeman H1 certification.

Chargeman H1 Module 2

E522

4 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of various types of high-voltage (HV) switchgears and their switching operating procedures – qualifying them to sit for the EIU Chargeman H1 examination.

Contents

- Overview of HV Switchgears and Their Functions
- HV Indoor Substation with Air Insulated Switchgears (AIS)
- Vacuum Circuit Breakers and Related Tests
- Direct Charge Power Supply
- Switching Operating Procedures and Simulations
- Ring Main Unit (RMU) Substation Maintenance

Target Groups

Technical personnel who hold an EIU Chargeman L1 certificate and intend to apply for an EIU Chargeman H1 certification.

Chargeman H1 Module 3

E523

4 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of power transformers, voltage regulating devices, and earthing systems for 11 kV distribution networks – qualifying them to sit for the EIU Chargeman H1 examination.

Target Groups

Technical personnel who hold an EIU Chargeman L1 certificate and intend to apply for an EIU Chargeman H1 certification.

Contents

- Overview of HV Transformers
- Design and Operation of Power Transformers
- Phase Shifting Transformers
- Voltage Control and Power Factor Correction
- HV Capacitor Bank, Static VAR compensator (SVC) and Reactors
- Voltage Regulators
- Earthing
- 11 kV Consumer Installation

Chargeman H1 Module 4

E524

4 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of key high-voltage (HV) equipment testing and commissioning procedures. They will also learn to identify HV faults, apply preventive measures, and understand protection and control systems – qualifying them to sit for the EIU Chargeman H1 examination.

Target Groups

Technical personnel who hold an EIU Chargeman L1 certificate and intend to apply for an EIU Chargeman H1 certification.

Contents

- General Conditions for Testing and Commissioning of HV Equipment
- Circuit Breaker and Transformer Testing
- HV Cables
- 33 kV Gas Insulated Switchgear (GIS)
- Siemens *DA 33 kV GIS
- HV Faults and Preventive Measures
- HV Equipment Protection and Control

Chargeman H2 Overhead Lines

E405

3 Days

Learning Outcomes

By completing this programme, participants will enhance their knowledge and skills to ensure compliance with relevant regulations and best practices when working on high-voltage overhead lines – qualifying them to sit for the EIU Chargeman H2 Overhead Lines examination.

Contents

- Electricity Rules, 1999
- Safety Rules for Work on High Voltage Equipment
- Local Earthing
- Pre-Arranged Shutdown Work Practices
- Overhead Manual/Standard Practices

Target Groups

Overhead Line Project or Maintenance supervisors with at least four years of working experience who intend to apply for a Chargeman H2 Overhead Lines certification.

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11 kV Underground Cable-Jointing

(Previously known as 11 kV Underground Cable-Jointing Practices)

E602

3 Days

Learning Outcomes

By completing this programme, participants will enhance their knowledge of 11 kV underground cables, correct jointing techniques, and safe work practices – preparing them for the EIU Grading of 11 kV Cable Jointing examinations.

Contents

- Cable Jointing Standards, Procedures and Technical Requirements
- Sarawak Energy Electrical Safety Rules and Procedures
- Cable Preparation for 11 kV XLPE 95sq mm/3C Cable
- Crimping Ferrules and Lugs
- Stress Control in Polymeric Cable Joints and Terminations
- Cable Testing Requirements

Target Groups

Technicians with at least five years of experience in underground cable work.

33 kV Underground Cable-Jointing

(Previously known as 33 kV Underground Cable-Jointing Practices)

E603

3 Days

Learning Outcomes

By completing this programme, participants will enhance their knowledge of 33 kV underground cables, correct jointing techniques, and safe work practices – preparing them for the EIU Grading of 33 kV Cable Jointing examinations.

Contents

- The Construction and Design of Power Cables up to 33 kV
- Jointing and Termination Instructions for Underground Cables
- Common Faults and Preventive Measures in Cable Termination and Jointing Methods

Target Groups

33 kV cable jointers with at least five years of experience.

Low Voltage Distribution System and Switching

(Previously known as Low Voltage Distribution System Practices and Switching Requirement)

E200

3 Days

Learning Outcomes

By completing this programme, participants will gain a better understanding of Sarawak Energy's low-voltage (LV) distribution system, including the procedures and safety requirements for low-voltage switching.

Contents

- Statutory Requirements
- Sarawak Energy Electrical Safety Rules
- Sarawak Energy Transmission and Distribution System
- Overhead Lines and Underground Cable Jumpers
- Earthing Overview
- LV Switching at Distribution Pillars
- Safety and Shutdown Practices
- Pillar Testing and Measurements

Target Groups

Electricians and operators with at least one year of experience that is involved in LV switching.

LV Fuse Switching

(Previously known as LV Fuse Switching Course)

E202

2 Days

Learning Outcomes

By completing this programme, participants will gain a better understanding of the procedures and safety requirements for replacing pillar fuses and pole-mounted fuses in Sarawak Energy's low-voltage (LV) distribution system.

Contents

- Statutory Requirements
- Sarawak Energy Electrical Safety Rules and Distribution System
- Measuring Instruments
- LV Pole Mounted Fuses, Pillar, and Cut-Outs
- Standby Services
- Mobile Field Force Automation (MFFA)

Target Groups

Contractors who are competent persons who have been assigned to carry out work as detailed in a 24-hour standby service contract.

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11 kV Switching

(Previously known as 11 kV Switching Requirements Course)

E500

4 Days

Learning Outcomes

By completing this programme, participants will enhance their knowledge and skills in the operation, control, and protection of distribution substations, switchgears, and transformers – qualifying them to sit for the CAC 11 kV Switching Authorisation interview assessment.

Contents

- Electricity Rules, 1999; Sarawak Energy Electrical Safety Rules; and OSHA (Amendment) Act 2022
- Substations and Network Systems Configurations
- Functions, Operations and Faults of a High Voltage (HV) Apparatus
- Protection and Relaying in a Distribution System
- Roles and Responsibilities of Switching Personnel

Target Groups

Switching personnel who intend to apply for CAC 11 kV switching authorisation.

Switching for Major Power Stations

(Previously known as Switching Requirements for Major Power Stations)

E502

3 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of switching procedures and safety requirements in major power stations – qualifying them to sit for the CAC Switching Authorisation at major power station interview assessment.

Target Groups

Switching personnel in major power stations who intend to apply for switching certification.

- Electrical Safety Rules Regarding the Control, Operation and Maintenance of the HV Apparatus
- HV Switchgear and Switching Requirements
- Electrical Protection Systems
- Major Electrical Equipment in Power Plants
- Synchronisation and Parallel Operation of Generators
- System and Switching Requirements

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33 kV Switching

(Previously known as 33 kV Switching Requirements)

E503

3 Days

Learning Outcomes

By completing this programme, participants will gain knowledge and skills in the operation and switching procedures of 33 kV switchgears and isolators – qualifying them to sit for the CAC 33 kV Switching Authorisation interview assessment.

Target Groups

11 kV switching personnel who intend to apply for CAC 33 kV switching authorisation.

Contents

- Power System Overview
- 33 kV Substation Layout
- SCADA Monitoring and Control
- Protective System for 33 kV Equipment
- Switching Practices
- Safety Issues
- Switching Programmes

Refresher for HV Switching

(Previously known as Refresher Course for HV Switching Personnel)

E505

2 Days

Learning Outcomes

By completing this programme, participants will refresh their knowledge of safety rules and requirements for switching operations, equipping them with the necessary understanding to operate new equipment and entitling them to renew their CAC 33 kV switching certification.

Contents

- Electrical Safety Rules and Procedures Regarding HV Switching
- Switching Operations for HV Equipment
- Protective Relays in 11 kV and 33 kV Systems
- Standard Operating Practices for HV Switching
- Safety Briefing and Lessons Learnt

Target Groups

11 kV/33 kV switching personnel who intend to apply for the renewal of their switching certification.

132/275 kV Switching

(Previously known as 132/275 kV Switching Requirements)

E511

3 Days

Learning Outcomes

By completing this programme, participants will gain knowledge and skills in the operation and switching procedures of 132 kV and 275 kV switchgears and isolators. This programme also serves as the qualifying assessment for CAC 132 kV/275 kV switching authorisation applications.

Contents

- System Overview
- 132/275 kV Substation Layout, Equipment and Safety Measures
- Control Panel Alarms and Layout
- Total Blackout Restoration Procedures
- Communication and SCADA Equipment
- Troubleshooting Techniques
- System Synchronisation

Target Groups

Switching personnel who intend to apply for CAC 132/275 kV switching authorisation.

Refresher for 132/275 kV Switching

(Previously known as Refresher Course for 132/275 kV Switching Personnel)

E506

3 Days

Learning Outcomes

By completing this programme, participants will refresh their knowledge of 132 kV and 275 kV switching procedures, entitling them to renew their switching certification.

Target Groups

132/275 kV switching personnel who intend to renew their switching certification.

Contents

- System Overview
- 132/275 kV Substation Layout and Safety Design
- Overview of Equipment Function, Design and Protective System
- Control Panel Alarms and Layout
- Total Blackout Restoration Procedures
- Communication and SCADA Equipment
- Troubleshooting Techniques
- System Synchronisation

Overhead Live Lines Works

E222

3 Days

Learning Outcomes

By completing this programme, participants will gain knowledge and skills for low-voltage (LV) overhead live-line work, based on Sarawak Energy's approved safety requirements and standard procedures.

Target Groups

Linesmen who intend to apply for Live-Line Work Certification. They must have a Chargeman L2 certification as well as a minimum of five years working experience on overhead lines.

Contents

- Types of Live-Line Work
- Live-Line Work Certification
- Requirements for Performing Live-Line Work
- Tools and Materials
- Live-Line Work Procedures

Street Lighting Maintenance

(Previously known as Street Lighting Maintenance Course)

E514

1 Days

Learning Outcomes

By completing this programme, participants will enhance their knowledge and skills in the safe operation, maintenance, and troubleshooting of street lighting installations.

Contents

- Safety Working Procedures and Guidelines
- Street Lighting Types and Construction
- Maintenance and Troubleshooting

Target Groups

On-site street lighting personnel who have attended and passed the E200 Low Voltage Distribution System Practices and Switching.

Distribution Protection Control & Instrumentation

E808

2 Days

Learning Outcomes

By completing this programme, participants will get an overview of protection settings, schemes, and philosophies for distribution networks involving 33 kV and 11 kV systems. The programme also provides guidelines for 'Isolation and Normalisation,' 'Request for Online Test,' and 'Sanction to Test' activities.

Contents

- Distribution Protection Principles and Schemes
- Request for Online Test and Sanction to Test
- Protection Isolation and Normalisation for Protection, Control, and Instrument (PCI) Works up to 33 kV

Target Groups

Distribution Protection and Control and Instrumentation personnel who intend to apply for or renew their CAC PCI Authorisation – Isolation for PCI Works up to 33 kV.

Transmission Protection Control & Instrumentation

E809

2 Days

Learning Outcomes

By completing this programme, participants will get an overview of protection settings, schemes, and philosophies for transmission networks with cable systems up to 275 kV. The programme also provides guidelines for 'Isolation and Normalisation', 'Request for Online Test', and 'Sanction to Test' activities.

Target Groups

Transmission Protection, Control and Instrumentation personnel who intend to apply for or renew their CAC PCI Authorisation – Isolation for Class 1 PCI Works up to 275 kV.

Contents

- Transmission Protection Principles and Schemes
- Request for Online Test and Sanction to Test
- Protection Isolation and Normalisation for PCI Works up to 275 kV

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First Aid

S100

3 Days

Learning Outcomes

By completing this programme, participants will gain knowledge and techniques for emergency first aid treatment – preparing them for the St John Ambulance's First Aid examination.

Target Groups

Personnel who wish to enhance their knowledge in First Aid, including those applying for or renewing competency and authorisation certificates, as well as individuals renewing their First Aid certificates.

Contents

- Principles, Priorities and Action in Providing First Aid for Various Emergencies
- Casualty Assessment, Diagnosis of Injury and Illnesses
- Principles of Adult Cardiopulmonary Resuscitation
- Respiratory, Heart and Circulatory Problems
- Treatments for Various Situations and Injuries
- Effects of Extreme Temperatures
- Transportation & Handling of Casualties

Safety Awareness for Working Near Electrical Installations

S200

(Previously known as Safety Awareness Course for Working Near Electrical to Installations)

1 Day

Learning Outcomes

By completing this programme, participants will learn about relevant Occupational, Safety and Health subjects and Safety Awareness elements when working within or near Sarawak Energy's electrical systems, including substations and high voltage overhead lines.

Target Groups

Personnel who are working in or near electrical systems, including substations and overhead lines.

Contents

- Occupational Safety and Health (Amendment) Act 2022
- Electrical Injuries and Shock Occurrences
- General Precautions and Safety Measures
- Identification of Various Distribution Systems and Requirements
- Adherence to Various Electrical Statutory Requirements
- Requirements of Relevant Sarawak Energy Contract Specifications

Safety Awareness for Working Near Power Station (Electrical)

S300

(Previously known as Safety Awareness Course for Working Near to Power Stations (Electrical))

1 Day

Learning Outcomes

By completing this programme, participants will learn about relevant Occupational, Safety and Health subjects and Safety Awareness elements when working within or near Sarawak Energy's power stations.

Contents

- Requirements of the Occupational Safety & Health (Amendment) Act 2022
- Requirements of the Electricity Rules 1999
- Sarawak Energy Electrical & Mechanical Safety Rules
- Workplace Hazards

Target Groups

All personnel who are working in or near power stations.

Safety Awareness for Working Near 33/11 kV Overhead Lines

S401

(Previously known as Safety Awareness Course for Working Near 33/11 kV Overhead Lines)

1 Day

Learning Outcomes

By completing this programme, participants will gain knowledge of safety requirements and work procedures to mitigate risks while working on 33/11 kV poles in compliance with relevant regulations.

Contents

- Sarawak Energy Electrical Safety Rules
- Identification of 33/11 kV/415V Structures
- Safe Working Clearances
- Requirements for Ladder Use
- Pole Top Rescue

Target Groups

Personnel working in the vicinity of 33/11 kV overhead lines.

Safety Awareness for Working Near EHV Transmission Lines

S402

(Previously known as Safety Awareness Course for Working Near to EHV Transmission Line)

1 Day

Learning Outcomes

By completing this programme, participants will gain an understanding of Occupational Safety and Health principles and develop safety awareness when working around or near Sarawak Energy's Extra High Voltage (EHV) transmission lines.

Contents

- Statutory Requirement
- Sarawak Energy Electrical Safety Rules for Work on High Voltage Equipment
- Potential Hazards & Accidents
- Electrical Injuries
- EHV Equipment for Transmission Lines
- SESCO's Contract Requirements

Target Groups

Personnel with little electrical knowledge who are required to work in proximity to electrical systems, such as near EHV Transmission Lines

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Safety Awareness for Working Near Substations

S500

(Previously known as Safety Awareness Course for Working Near to Substations)

1 Day

Learning Outcomes

By completing this programme, participants will gain an understanding of Occupational Safety and Health principles and enhance their safety awareness when working within or near Sarawak Energy's substations.

Contents

- Substation Layout and Equipment
- Electrical Safety Rules for High Voltage Equipment Work
- Electricity Rules, 1999
- OSHA (Amendment) Act 2022
- Potential Hazards and Accidents
- Contract Specifications

Target Groups

Personnel who work in or near substations

Safety Awareness for Working Near EHV Substation

(Previously known as Safety Awareness Course for Working Near to EHV Substation)

S501

1 Day

Learning Outcomes

By completing this programme, participants will gain an understanding of Occupational Safety and Health principles and safety awareness considerations when working around or near Sarawak Energy's Extra High Voltage (EHV) substations, including associated installations and equipment.

Contents

- Sarawak Energy Electrical Safety Rules for Work on High Voltage Equipment
- Electricity Rules, 1999
- OSHA (Amendment) Act 2022
- Potential Hazards and Accidents
- SESCO Contract Requirements

Target Groups

Personnel with limited electrical knowledge who are required to work in proximity with electrical systems around and near EHV substations.

Safety Awareness for Working Near Substations

(Previously known as Safety Awareness Course for Working Near to Substations)

S702

2 Days

Learning Outcomes

Upon completion, learners will be able to follow relevant OSHA legislation and regulations, follow safe working at height practices, and correctly use tools and equipment. They will also learn about systems designed to protect employees and others from injury, emergency procedures for Pole Top Rescue (PTR), and proper fitting, use, and storage of equipment.

Contents

- Legislation and Guideline
- Risk Assessment and Management
- Equipment and Tools Usage, Inspection, Maintenance and Storage
- Safe Climbing Procedure
- Emergency Management

Target Groups

Technical personnel working at height on distribution overhead systems.

Steam Boiler Operator Training

SBO

5 Days

Learning Outcomes

By completing this programme, participants will learn about steam boiler operations and related DOSH regulations – becoming eligible for the DOSH steam boiler operator assessment interview.

Contents

- Introduction to Steam Boilers
- Relevant Laws
- Steam Boiler Operations and Troubleshooting
- Boiler Water Treatment
- Steam Turbine and Combustion Fundamentals
- Steam Boiler Maintenance

Target Groups

Technical personnel who are eligible to apply for the DOSH steam boiler operator assessment.

Steam Boiler Engineer Grade 2

SBE2

5 Days

Learning Outcomes

By completing this programme, participants will have a robust understanding of steam boiler systems, including their design, installation, testing, operation, legal and safety requirements, and maintenance practices. This knowledge will enable them to operate and manage steam boilers efficiently, troubleshoot issues, and implement preventive measures to ensure safe and reliable boiler performance.

Target Groups

This course is designed for workers involved in the operation, maintenance, and management

Contents

- Introduction to Boiler
- Acts, Regulations & Codes
- Basic boiler Fabrication and Construction
- Boiler Essential Fittings & Mounting
- Steam Turbines Fundamentals
- Boiler Commissioning
- Boiler Operation
- Boiler Water Treatment
- Combustion Fundamental
- Boiler Inspection & Repair
- Material Science
- Exam Preparation (Mock up Test)

Low Voltage Main Switchboard Requirement & Testing

E206

2 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of main switchboard installations, testing, and protection requirements.

Contents

- Requirements for the Main-Switchboard (MSB) Room
- MSB Installation Requirements
- Technical Requirements for Inverse Definite Minimum Time (IDMT) Earth Fault Protection
- MSB Testing Requirements

Target Groups

Wiremen, electricians, installation testers, and internal wiring contractors.

Electrical Power System Fundamentals for Non–Technical Personnel

E209

3 Days

Learning Outcomes

By completing this programme, participants will gain a basic understanding of Sarawak Energy's electrical power systems and installations, enhancing their awareness of technical operations within the organisation.

Contents

- Overview of the Sarawak Energy Power System
- Basic Electrical Terminology
- Identification of Basic Electrical Equipment
- Tariff Calculations
- Load Consumption for Appliances
- Calculation of Energy Costs
- Safety Requirements
- Earthing of Installations

Target Groups

Non-technical personnel – particularly front liners – who are interested in the fundamentals of Sarawak Energy's power system.

Meter Inspection, Installation and Disconnection

E225

1 Day

Learning Outcomes

By completing this programme, participants will be briefed on the correct approach to meter installations, inspections, and disconnections, with a focus on safety.

Contents

- Electrical Safety Rules for Works on LV Equipment.
- LV Distribution System
- Earthing
- SOP-Aligned Installation Practices
- Meter Inspection
- Disconnection Procedures

Target Groups

Retail technical staff from our Revenue Protection Unit (RPU) and meter installation, inspection, and disconnection teams.

Substation Routine Maintenance

(Previously known as Substation Routine Maintenance Course)

E509

2 Days

Learning Outcomes

By completing this programme, participants will enhance their knowledge of routine maintenance practices for 11 kV distribution substations.

Contents

- Sarawak Energy Electrical Safety Rules HV Requirements
- Inspection and Maintenance Standards
- 11 kV Substation Routine Maintenance Procedures

Target Groups

Technicians involved in routine substation maintenance.

High Voltage Overhead Lines Testing & Commissioning

E406

1 Day

Learning Outcomes

By completing this programme, participants will gain theoretical and practical knowledge of the technical requirements for testing and commissioning high-voltage (HV) overhead lines.

Contents

- Statutory Requirements
- Sarawak Energy Electrical Safety Rules
- Overhead Construction and Design Manual
- Inspection, Testing and Commissioning Overview
- Phase Sequence Test
- Safety Measures During Commissioning

Target Groups

Overhead Lines project supervisors who hold a Chargeman H2 Overhead Lines Competency certification.

Introduction to Sarawak Energy Power System Module 2: Cables and Lines

E904

(Previously known as Introduction to Sarawak Energy Power System Module 2: Cables and Lines)

2 Days

Learning Outcomes

By completing this programme, participants will gain an understanding of Sarawak Energy's fundamental principles for the installation, commissioning, operation, and maintenance of underground cables and overhead lines.

Contents

- Safety Requirements and Installation Standards
- Power Cable Designs
- Underground Cable Laying Practices
- Cable Preparation
- Common Faults and Preventive Measures in Termination and Jointing Methods
- Stress Control in Polymeric Joints and Terminations
- Pole-Top Rescue Procedures

Note: The introductory course SESCo Power System Module 1: Statutory Requirements has been discontinued, as its content has been integrated into Modules 2 through 4.

Target Groups

Newly recruited engineers and engineering assistants.

Introduction to Sarawak Energy Power System Module 3: Generators and Protection

E905

(Previously known as Introductory Course on SESCO Power System Module 3: Generators and Protection)

2 Days

Learning Outcomes

By completing this programme, participants will gain knowledge of Sarawak Energy's fundamental principles for installing, commissioning, operating, and maintaining generators and protection systems.

Target Groups

Newly recruited engineers and engineering assistants.

Contents

- Overview of Generating Sets and Relevant Procedures
- Common Faults, Troubleshooting and Preventive Measures
- Operating Protective Relays
- Protection Schemes
- Fault Level Calculations
- Relay Settings
- Grading of Relays

Introduction to Sarawak Energy Power System Module 4: High Voltage Systems

E906

(Previously known as Introductory Course on SESCO Power System Module 4: High Voltage Systems)

2 Days

Learning Outcomes

By completing this programme, participants will gain an understanding of Sarawak Energy's fundamental principles for installing, commissioning, operating, and maintaining high-voltage (HV) equipment and systems.

Target Groups

Engineers and engineering assistants.

Contents

- Sarawak Energy Safety Rules Rev. 2013
- The Electricity Rules, 1999
- HV Switchgears
- Fuse Protection of Medium Voltage (MV) Apparatus
- Repairing and Maintaining Substation Equipment
- Testing Requirements
- HV Faults and Preventive Measures

Appendix 2:
Training Matrix 2027



EIU Electrical Competency Certification

All EIU competencies require participants to pass the **[S100] Basic First Aid** and **[EOER] Electricity Ordinance & Electricity Rules Theory Examination**. However, these are **not the only prerequisites**. Additional programmes are still required, as detailed in the table below.

Please note that competency applications for '**Chargeman H1 – Voltage Higher Than Low Voltage (HV) Electrical Substation & Auxiliaries**' will also involve an additional interview assessment by the EIU.

Competency Category	Relevant Programme	Relevant Exam	Pre-Requisite/ Conditions
Chargeman L1 – Low Voltage (LV) Main Switchboard & Auxiliaries	E211, E212 and E213	T-A and P-A	Employee only
Chargeman L2 (O/H) – Low Voltage (LV) Overhead Lines & Auxiliaries	E223	T-A2 and P-A2	Employee only
Chargeman L2 (U/G) – Low Voltage (LV) Underground Cable Laying & Auxiliaries	E604	T-LHUG and P-LHUG	-
Chargeman L3 – Low Voltage (LV) Generating Stations	E703	T-L3 and P-L3	Employee with Chargeman L1
Chargeman H1 – Voltage Higher Than Low Voltage (HV) Electrical Substation & Auxiliaries	E521, E522, E523 and E524	T-H and P-H	Chargeman L1 Holder
Chargeman H2 (O/H) – Voltage Higher Than Low Voltage (HV) Overhead Lines & Auxiliaries	E405	T-A3 and P-A3	Chargeman L2 O/H Holder
Chargeman H2 (U/G) – Voltage Higher Than Low Voltage Underground Cable Laying & Auxiliaries	E604	T-LHUG and P-LHUG	-
11 kV Underground Cable-Jointing	E602	T-G and P-G	-
33 kV Underground Cable-Jointing	E603	T-G33 and P-G33	11 kV Cable Jointer

CAC Competency and Authorisation Certification

Before applying for the CAC interview assessment for certain competency and authorisation certifications, you must complete the specific programmes and secure a valid first aid certificate.

For employees, please refer to the CAC Policies, Procedures and Guidelines for further details on the needed programmes.

For non-employees, please refer to the table below for relevant details:

Category	Pre-requisite EIU Certification	Programme Requirements
Low Voltage Substation Equipment	Chargeman L1/ ES/ CEE	E200
High Voltage Substation Equipment	Chargeman H1/ ES/ CEE	-
Low Voltage Overhead Lines	Chargeman L2 (O/H) /ES/ CEE	-
High Voltage Overhead Lines	Chargeman H2 (O/H)/ ES/ CEE	-
Low Voltage Underground Cable	Chargeman L2 (U/G) /ES/CEE	-
High Voltage Underground Cable	Chargeman H2 (U/G) /ES/CEE	-
Low Voltage Power Station Electrical System	Chargeman L3/ ES/ CEE	-
High Voltage Power Station Electrical System	Chargeman H3/ ES/ CEE	-
HV Equipment Testing	EIU CH/ES/CEE	-
HV Cable Jointing up to 11 kV	11 kV Cable Jointer	-
HV Cable Jointing up to 33 kV	33 kV Cable Jointer	-
Protection, Control, Instrumentation (Distribution)	Chargeman L1/ES/CEE	E808
Protection, Control, Instrumentation (Transmission)	Chargeman L1/ES/CEE	E809
Fused Cutout Work	Chargeman L1/ WG2/ ES/ CEE	E200
Streetlighting Work	Chargeman L2 (O/H)	E200 and E514
Communication Infrastructure Installation Works	Chargeman L2 (O/H)	E500
LV Live Line Works	Chargeman L2 (O/H)/ ES/ CEE	E222
LV Switching (for non-employees)	Chargeman L1/ L2/ L3/ ES/ CEE/DOSH ICE Driver	E202
Line Vegetation Clearing	-	S401
Routine Compound Maintenance Works Within Substation/Power Station	-	Attend either one of the following: S200, S300, S500, or S501
Civil (or M&E) Works within Substation/Power Station	-	
Patrolling & Guarding Works Within Substation/Power Station	-	
Meter Reading Within Substation/Power Station	-	

EIU Certification Legend		
ES – Electrical Supervisor	CEE – Competent Electrical Engineer	WG2 – Wireman Grade 2

Acknowledgements

Sarawak Energy expresses its gratitude to the Learning & Development and Capability Management team for compiling and organising this directory, as well as the individual departments that supported its development.

Contact Us

This Learning Directory is a live document that is regularly updated to reflect changes to programme details and schedules.

For further enquiries, please reach out to the Learning & Development and Capability Management team via the channels below:

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