

# ALTERNATIVE <PATHWAYS>

## for LICENSED ELECTRICAL WORKERS

### LICENSED ELECTRICAL TECHNICIAN PREPARATORY PROGRAMME (Programme Code: ENO33)

#### LEARNING OUTCOMES

The Licensed Electrical Technician Preparatory Programme will equip participants with the necessary theoretical foundation and practical application skills to carry out the work of a Licensed Electrical Technician.

#### PRE-REQUISITES

Applicants are required to have:

- At least 5 years as a Practicing Licensed Electrician; or
- Diploma in Electrical Power Engineering from Singapore Polytechnic or Ngee Ann Polytechnic, and at least 1 year of relevant practical work experience (only required to complete the practical modules by SIPG)

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The programme is optional for applicants with:

- Diploma in Electrical Power Engineering from Singapore Polytechnic or Ngee Ann Polytechnic, and
- At least 2 years of relevant practical work experience

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Priority will be given to Licensed Electricians with 5 years of relevant work experience.

#### PROGRAMME CONTENTS

##### Theoretical Foundation

Conducted by Singapore Polytechnic/Ngee Ann Polytechnic

No.	Description	Hours	Total
<b>Module 1: Electrical Circuit Theory and Analysis</b>			
1.1	Basic Circuit Theory	3	28
1.2	AC Theory	13	
1.3	Three Phase AC Circuits	12	
1.4	Written Assessment 1	2	2
<b>Module 2: Distribution System and Protection</b>			
2.1	Power Generation, Transmission and Distribution System	3	28
2.2	Fault calculation	5	
2.3	Circuit Switching and Switchgears	3.5	
2.4	Protection	7	
2.5	Distribution Transformers	3	
2.6	Cables and Wiring Systems	3	
2.7	Substation Earthing and System Earthing	1.5	
2.8	Testing and Commissioning	2	
2.9	Written Assessment 2	2	2

No.	Description	Hours	Total
<b>Module 3: Electrical System Design</b>			
3.1	Electricity Distribution System & Related Regulations	6	56
3.2	Characteristics and Selection of Protective Devices	9	
3.3	Design of Residential Electrical Installation	9	
3.4	Design of Industrial and Commercial Electrical Installation	6.5	
3.5	Standby Generators	3	
3.6	Inspection and Testing	3	
3.7	Temporary Electrical installation	6	
3.8	Earthing System	1.5	
3.9	Grid-connected PV System	9	
3.10	EV Charging System	3	
3.11	Written Assessment 3	2	2
<b>Module 4: Electrical Machines and Control</b>			
4.1	Single-phase and Three Phase Transformers	2.5	21
4.2	Induction and DC Motors	3	
4.3	Synchronous Motors & Generators	3	
4.4	Semiconductor Devices for Motor Control	3	
4.5	DC & AC Drives	5	
4.6	Motor Starters	4.5	
4.7	Written Assessment 4	2	2
		<b>Total</b>	<b>141</b>

## Practical Application

Conducted by Singapore Institute of Power and Gas

No.	Description	Hours	Total
<b>Module 5: Safety and Connection Requirements</b>			
5.1	Safety & Licensing Requirements	7	11
5.2	The Supply Connection Process	3.5	
5.3	Assessment	0.5	
<b>Module 6: Commercial and Industrial Low Voltage Installation</b>			
6.1	Design for Commercial and Industrial Low Voltage Installation	14	22
6.2	Distribution Switchboard Maintenance for Commercial and Industrial Low Voltage Installation	7	
6.3	Assessment	1	
<b>Module 7: Testing Methods</b>			
7.1	Inspection & Testing of Installations up to 500 kVA	14	22
7.2	Commissioning of Switchboard up to 500kVA	7	
7.3	Assessment	1	
<b>Module 8: HV Switching Operations and Procedures</b>			
8.1	Protection Scheme	3.5	11
8.2	Operation and Maintenance of Distribution Transformer	3.5	
8.3	Switching Operations and Procedures	3.5	
8.4	Assessment	0.5	
		<b>Total</b>	<b>66</b>

## ASSESSMENT

For modules conducted by SP/NP, a written assessment will be conducted upon completion of each module. For modules conducted by SIPG, a practical assessment will be conducted upon completion of each module.

## PROGRAMME TIMING

The programme will be conducted during weekday evenings (6.30pm – 10.00pm) and Saturdays (8.30am – 6.00pm).

## CERTIFICATE

Participants who have successfully pass all theoretical and practical modules will be awarded a Certificate of Achievement jointly issued by SIPG and SP/NP.

## EMA LICENSING COMPETENCY ASSESSMENT

The “Certificate of Achievement” is required by EMA for participants without the relevant educational qualification. Participants are required to ensure that they satisfy the relevant work experience and pass the “EMA Licensing Competency Assessment” to qualify for an Electrical Technician’s License.

Please refer to EMA website for more information on application for Electrical Technician License:  
[https://elise.ema.gov.sg/elise/newworkerapplicationservlet?lic\\_type=TE](https://elise.ema.gov.sg/elise/newworkerapplicationservlet?lic_type=TE)

## PROGRAMME FEE

### Full Programme (Theoretical Foundation & Practical Applications)

	Programme Fee	Nett Fee after SSG Funding*		
		Singapore Citizens and Permanent Residents <40 years old	Singapore Citizens ≥40 years old only	Enhanced Training Support for SMEs#
Without GST	\$11,460.00	\$3,438.00	\$1,146.00	\$1,146.00
With GST	\$12,262.20	\$3,678.66	\$1,386.66	\$1,386.66

### Practical Applications Only

	Programme Fee	Nett Fee after SSG Funding*		
		Singapore Citizens and Permanent Residents <40 years old	Singapore Citizens ≥40 years old only	Enhanced Training Support for SMEs#
Without GST	\$4,800.00	\$1,440.00	\$480.00	\$480.00
With GST	\$5,136.00	\$1,540.80	\$580.80	\$580.80

\* Subjected to SSG’s approval and changes.

# For more information on the Enhanced Training Support for Small & Medium Enterprises (SMEs) scheme, please click [here](#).

Self-sponsored applicants may use their SkillsFuture Credit (SFC) to offset the programme fee.

## PROGRAMME SCHEDULE

Next intake: February 2023 (Tentative)

Registration closing date: 4 weeks before programme commencement

*Application will be considered upon submission of completed application form and all necessary supporting documents. SIPG will contact the applicant after confirmation that all admission criteria are met.*

For enquiries, contact SIPG at [training-institute@spgroup.com.sg](mailto:training-institute@spgroup.com.sg) or 6916 7930  
 SIPG reserves the rights to amend any details relating to the programme without prior notice.

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## Registration Form

### Licensed Electrical Technician Preparatory Programme

PART A: PERSONAL PARTICULARS				
<input type="checkbox"/> Self-Sponsored Applicant		<input type="checkbox"/> Company-Sponsored Applicant		
** Full Name <small>(As in NRIC/FIN)</small>		Gender M / F	Date of Birth <small>(dd/mm/yy)</small>	
** NRIC/FIN		ID Expiry Date <small>(dd/mm/yy)</small>	Race: Chinese / Malay / Indian / Others:	
** Nationality		**Monthly Salary <sup>1</sup>	LE License No. <small>(if applicable)</small>	Years of Relevant Experience as LE <small>(if applicable)</small>
** Contact Number		Email Address		
Address <small>(Residential address for self-sponsored applicants)</small>				
FOR COMPANY-SPONSORED APPLICANTS ONLY				
Company Name				
Company Address				
Contact Person		Designation		
Contact Number		Email Address		
PART B: PRE-REQUISITES				
1. Please indicate your relevant <b>practical work experience</b> :				
Employer Name	Position Held	Year of Joining	Year of Leaving	
2. Please indicate your <b>educational qualifications</b> :				
Qualification Title	Name of Institute		Year Completed	
Please attach <b>relevant supporting documents</b> . [Refer to <b>Annex A</b> for the list of supporting documents required.]				

<sup>1</sup> Salary range:

a) Unemployed b) Below \$1,000 c) \$1,000 - \$1,499 d) \$1,500 - \$1,999 e) \$2,000 - \$2,499 f) \$2,500 - \$2,999 g) \$3,000 - \$3,499 h) \$3,500 and above

\*\* Mandatory field

**PART C: PROGRAMME TYPE**

Please tick the programme type that

**Full Programme** - Theoretical Foundation & Practical Applications

**Practical Applications only** (Applicable only to applicants with Diploma in Electrical Power Engineering from Singapore Polytechnic/Ngee Ann Polytechnic or higher qualifications that are recognised by EMA/PEB.)

**PART D: PAYMENT**

Payment is only required after the programme has been scheduled for the applicant and applicant has confirmed his/her availability.

An invoice with the final amount (after funding, if any) will be sent to the applicant. Modes of payment will be advised at the point of issuing the invoice to the applicant.

**PART E: DECLARATION**

By submitting this registration form:

- I hereby declare that all information given is true and accurate;
- I acknowledge that SIPG shall not be responsible should EMA rejects my application for licensing; and
- I agree to the terms and conditions stated below.

(i) For Self-Sponsored Application

(ii) For Company-Sponsored Application

Name:

\_\_\_\_\_

Name of Authorised Personnel:

\_\_\_\_\_

Signature:

\_\_\_\_\_

Signature:

\_\_\_\_\_

Date:

\_\_\_\_\_

Date:

\_\_\_\_\_

Company Stamp

**PART F: PERSONAL DATA PROTECTION ACT**

I/We acknowledge and agree that SIPG may collect, use and disclose to any third party any and all particulars relating to my/our personal information for the purposes of

- (i) providing the requested services in respect of the programme(s),
- (ii) billing and account management (including debt collection or recovery);
- (iii) conducting surveys or obtaining feedback;
- (iv) informing me/us of services and offers by SIPG, its related entities and business affiliates (unless I/we duly inform you otherwise); and
- (v) complying with all applicable laws and regulations, and business requirements.

Name:

\_\_\_\_\_

Signature:

\_\_\_\_\_

Date:

\_\_\_\_\_

**TERMS AND CONDITIONS:**

- 1) The company and individual applicant have read and understood the terms of the programme information and registration form.
- 2) The information collected on this form is used for programme registration, account servicing of programme-related activities and/or for application of programme-related funding to appropriate funding agencies.
- 3) This registration form must be submitted to SIPG at least 4 weeks before programme commencement.
- 4) Payment must be made to SIPG before programme commencement.
- 5) SIPG reserves the right to amend any details relating to the programme without any prior notice.
- 6) Request for withdrawal must be made in writing and are subject to approval by SIPG.
  - >5 working days before programme commencement : 100% refund;
  - Less than 5 working days before programme commencement : no refund.
- 7) Request for transfer/replacement must be made in writing at least 5 working days before programme commencement and is subject to approval by SIPG. SIPG reserves the right to impose an administration fee for such requests.
- 8) Trainee shall be bound by the terms and conditions of any applicable funding scheme as approved by SIPG.
- 9) In the event that the trainee fails to meet any of the requirements set under the funding scheme or has been granted funding for the same programme before, thereby resulting that his/her funding application is rejected, the trainee is liable to pay the balance of the full programme fee to SIPG.
- 10) Photographs of trainees may be taken at the event for SIPG's marketing materials and other publications.

**ANNEX A: LIST OF SUPPORTING DOCUMENTS REQUIRED**

Please submit all relevant supporting documents along with the application form via email.

Note: SIPG reserves the right to reject any application due to incomplete submission of supporting documents.

1	<b>Company Testimonial Letter</b> [To clearly state the years and job scope of relevant electrical works experience]
2	<b>Educational Certificates (For non-Licensed Electricians)</b>  Highest Qualification ( <u>Minimum</u> of Diploma in Electrical Power Engineering from Singapore Polytechnic/Ngee Ann Polytechnic or higher qualifications that are recognised by EMA/PEB)