

# ALTERNATIVE <PATHWAYS >

for **LICENSED ELECTRICAL WORKERS**

## LICENSED ELECTRICAL TECHNICIAN PREPARATORY COURSE [Course Code: ENO33]

### LEARNING OUTCOMES

The Licensed Electrical Technician Preparatory Course 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)

The course 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

### COURSE 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 Process</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.

## COURSE TIMING

The course 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)

## COURSE FEE

	Full Course Fee	Nett Fee after Subsidy		
		Singapore Citizens and Permanent Residents <40 years old	Singapore Citizens and Permanent Residents ≥40 years old	Workfare Training Support (WTS)
Without GST	\$11,460.00	\$3,438.00	\$1,146.00	\$573.00
With GST	\$12,262.20	\$3,678.66	\$1,386.66	\$813.66

## COURSE SCHEDULE

Jan 18 Intake				
Modules	Start Date	End date	Assessment Date	Location
1	21 Jan 2019	13 Feb 2019	20 Feb 2019	Ngee Ann Polytechnic
2	25 Feb 2019	20 Mar 2019	27 Mar 2019	
3	1 Apr 2019	22 May 2019	29 May 2019	
4	3 Jun 2019	19 Jun 2019	26 Jun 2019	
5	6 Apr 2019	13 Apr 2019	13 Apr 2019	Singapore Institute of Power and Gas
6	20 Apr 2019	27 Apr 2019	4 May 2019	
7	11 May 2019	18 May 2019	25 May 2019	
8	1 Jun 2019	8 Jun 2019	8 Jun 2019	

SIPG reserves the rights to amend any details relating to the course without prior notice.

For enquiries, contact SIPG at [training-institute@spgroup.com.sg](mailto:training-institute@spgroup.com.sg) or 6916 7930

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## Registration Form

### Licensed Electrical Technician Preparatory Course – Jan 19 Intake

**(Registration Closing Date: 21 December 2018)**

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>		
** 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: PAYMENT				
<input type="checkbox"/> <b>Cheque No. :</b> _____ <b>Issuing Bank :</b> _____ <small>[Cheque shall be made payable to SINGAPORE INSTITUTE OF POWER AND GAS PTE LTD and mailed to:                      SP Group, 2 Kallang Sector, Level 2, Singapore 349277 Attn: Singapore Institute of Power and Gas, Training Operations]</small>				
<input type="checkbox"/> <b>E-invoice – Business Unit Code:</b> _____		<input type="checkbox"/> <b>Company GIRO</b> <small>(Please contact us for more information. Do note if you are applying for funding, only company cheque or company GIRO will be accepted)</small>		
<input type="checkbox"/> <b>NETS</b> <small>(Please make payment at our reception at 1A Woodleigh Park, Singapore 357874)</small>  Operating hours for walk-in registration & payment:      Monday – Friday: 9am – 12pm, 2pm – 5pm Closed on weekends & public holidays				

<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: PRE-REQUISITES**

1. Please indicate your relevant **practical work experience**:

Employer Name	Position Held	Year of Joining	Year of Leaving

2. Please indicate your **educational qualifications**:

Qualification Title	Name of Institute	Year Completed

Please attach **relevant supporting documents** (copy of NRIC, Employment Letter, Certificates, Workfare Training Scheme Letter, etc.)

**PART D: 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 E: 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 course(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 has read and understood the terms of the course information and registration form.
- 2) The information collected on this form is used for course registration, account servicing of course-related activities and/or for application of course-related funding to appropriate funding agencies.
- 3) This registration form must be submitted to SIPG at least 4 weeks before course commencement.
- 4) Payment must be made to SIPG before course commencement.
- 5) SIPG reserves the right to amend any details relating to the course without any prior notice.
- 6) Request for withdrawal must be made in writing and are subject to approval by SIPG.
  - >5 working days before course commencement : 100% refund;
  - 3-5 working days before course commencement : 50% refund of fee paid;
  - Less than 3 working days before course commencement : no refund.
- 7) Request for transfer/replacement must be made in writing at least 5 working days before course 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 course before, thereby resulting that his/her funding application is rejected, the trainee is liable to pay the balance of the full course fee to SIPG.
- 10) Photographs of trainees may be taken at the event for SIPG's marketing materials and other publications.