



**IES PREPARATION COURSE
FOR
PPE PART2 EXAM ELECTRICAL ENGINEERING
Code of Practice for Lightning Protection SS555:2018
(Made Easy to Understand with Explanations for Design)**

PROGRAMME DETAILS

Date	: 03 May 2021 (Monday)
Duration	: 8 Hours
Time	: 9am – 6pm
Venue	: IES Academy@Jurong East (Devan Nair Institute, E2i Building) 80, Jurong East Street 21 #04-10, Singapore 609607 (Near Jurong East MRT)
Fees *	: \$428 (IES Member), \$535 (Non-Member)

- *Inclusive of 7% GST and course materials.*
- *Certificate of Attendance will be given to participants with 100% attendance*

INTRODUCTION

The Code of Practice for Lightning Protection SS555: Parts 1 to 4, 2018 is a very comprehensive code of practice for the design, installation and maintenance of lightning protection systems. It is aligned to the IEC 62305: Parts 1 to 4, 2010 international standard on protection against lightning. Building and Construction Authority (BCA) has mandated that with effect from 1 May 2019, developments whose building plans are submitted on or after the date must comply with the relevant requirements in SS555:2018. In December 2020, an Amendment No. 1 was also issued for SS555:Part 3:2018

OBJECTIVES

This course aims at providing the participants with a clear understanding of the effects of lightning and what can or cannot be done to alleviate its effects. The rationale for the recommendations of the Code is then explained.

The 4 parts of SS555:2018 are as follows:

- 1) Part 1: General principles - provides fundamental guiding principles on lightning protection for installations.
- 2) Part 2: Risk management – introduces comprehensive risk management concepts to help users make a more informed decision in selecting the most appropriate lightning protection measures.
- 3) Part 3: Physical damage to structure and life hazard - elaborates on the requirements to reduce physical damage and life hazard within the vicinity of a structure with the increasing height, size and complexity of building structures.
- 4) Part 4: Electrical and electronic systems within structures – provides guidelines for the design, installation, inspection, maintenance and testing of Lightning Electromagnetic Pulse (LEMP) protection systems for electrical and electronic systems and equipment used in building structures.

The course aims to provide participants with a thorough understanding of the Code of Practice with explanations backed by basic electrical engineering theory.

Note – Participants taking this course must bring their own copy of the Code of Practice SS555:2018.

COURSE OUTLINE

The topics to be discussed in each parts of the Code of Practice will include but not limited to the following:

- Lightning current parameters
- Damage due to lightning
- Lightning protection levels (LPL)
- Lightning protection zones (LPZ)
- Protection measures
- Risk management
- Class of lightning protection
- Design of lightning protection system – external & internal
- Maintenance and inspection of an LPS
- Earthing and bonding

The course will also be illustrated by practical examples of lightning protection problems and how they were solved.

The course will also specifically discuss the items in the syllabus of PPE examination Part 2 as follows:

Lightning Protection Systems

- Rolling sphere technique of determining zones of protection
- Spacing of air terminations and types of air termination
- Down conductors for building below 45 metres and those exceeding 45 metres
- Earth electrodes, earth resistance values and hazards of a rise in ground potential caused by lightning strike
- Selection of appropriate materials and installation methods
- Prevention of side flashing
- Design requirement of complete lightning protection system
- Transients and surge suppression
- Effect of lightning on system and structure
- Source and type of damages due to lightning
- Risk assessment aspect in lightning protection

TARGET AUDIENCE

This course should be of interest to all Electrical Installation designers, Electrical Engineers from the installation and contracting industry, Plant Electrical Engineers from Industrial Sector as well as all LEWs and any interested parties. This course will benefit greatly those young Electrical Engineers and individuals who are aspiring to be professional engineers as well as those who are preparing to sit for the Practice of Professional Engineering Examination Part 2 (Electrical). SS555 is one of the topics in the syllabus of the PPE examination Part 2.

CV OF SPEAKER



Prof. Liew Ah Choy

Prof Liew Ah Choy received the BE (First Class Honours) and PhD degrees from the University of Queensland, Australia in 1969 and 1972 respectively. From 1972 to 1979, he was with the Electrical Engineering Department of the University of Malaya. From April 1979 till July 2015, he was with the National University of Singapore (NUS) where he served as Professor and Head of the Electrical & Computer Engineering Department. He has in 2019 been conferred as Emeritus Professor by NUS. He is also the Director and CEO of EquiVolt Pte Ltd and EquiVolt M Pte Ltd, two consultancy companies specializing in providing design and solutions to lightning protection and electrical engineering problems. His main interests are lightning and lightning protection, high voltage, power quality and power systems engineering. He has over 285 publications in international and regional journals and has acted as specialist consultant to many power, high voltage and lightning related and other technical projects in Singapore, Malaysia and Indonesia. He is the chairman of the technical committee for the Singapore Code of Practice for Lightning Protection, SS555:2010 and SS555:2018 and its previous edition CP 33:1996. He was also the chairman of the Industry Consultative Committee set up by the Public Utilities Board and the Economic Development Board for the setting up of a Power Quality Standard for Singapore; and was a member of the Energy System Review Committee set up by the Ministry of Trade & Industry, Singapore for the study of the reliability and robustness of the energy system in Singapore. He has served on several Government Boards and is presently on the Board of Energy Market Authority.

In the area of High Voltage Technology and Testing, he has done extensive testing and certification of power apparatus for local and regional manufacturers of power transformers, cables, switchgear, protective devices and others. He has also investigated many cases of failures of high voltage transformers, switchgear and motors in the region.

In the area of Lightning Performance of Transmission Lines, he developed a very sophisticated analytical method for the evaluation of lightning performance of line designs. His Monte Carlo based Dynamic Travelling Wave method has been used for the design and analysis of various categories of lines in Australia and Malaysia.

Registration Form

IES PREPARATION COURSE FOR PPE PART2 EXAM ELECTRICAL ENGINEERING Code of Practice for Lightning Protection SS555:2018 (Made Easy to Understand with Explanations for Design)

Date : 03 May 2021, Monday
Time : 9am – 6.00pm
Venue : IES Academy@Jurong East (Devan Nair Institute, E2i Building)
80 Jurong East Street 21, #04-10 Singapore 609607
Fees (Include GST): IES Members: \$428
Non-Members: \$535

Please register online the completed form by **26 April 2021** to:

Contact Person: **Jessie Tan**
Address: **80 Jurong East Street 21, #04-10 Singapore 609607**
Tel: **64639211** Email: **jessie.tan@iesnet.org.sg**

Participant Details

*Name : _____ *NRIC : _____
(Please written in BLOCK Letter)

Company : _____ *Designation : _____

*Address 1 : _____
(For mailing of invoice and receipt)

Address 2 : _____
(For mailing of Certificate)

*Postal Code : _____ Sex : _____ Male / Female

*Contact No. : _____ Fax : _____

*Your Email : _____
(For sending of confirmation email, preferable personal unless company sponsored)

Please indicate : IES members IES M'ship No.: _____
 Non-members

Contact Person Details (if different from participant)

#Name : _____ Designation: _____

#Tel : _____ Fax: _____

#Email : _____

Payment Details

Bank / Cheque No.: _____ Amount (\$): _____

Sponsored by company

* All Fees are inclusive of 7 % GST.

* Cheque should be made payable to: "IES Academy Pte Ltd".

Acceptance of Terms and Conditions for Registrations of IES Academy's Events

I agree to abide by the Terms and Conditions for Registration of IES Academy's Events

Name : _____ Signature : _____

***Mandatory entry**

#Compulsory Entry for participant who choose to be INVOICE to your company

TERMS & CONDITIONS COURSE REGISTRATION

Registration

Any registration, whether on-line or fax will be on a ***first-come-first-served basis*** and will only be confirmed upon receipt of full payment by IES Academy Pte Ltd unless otherwise invoice to company.

All registrations must be submitted with duly completed registration form.

Closing Date & Payment

The closing date of the event will be 1 week prior to event commencement date or earlier. Cheques should be crossed 'A/C payee only' and made payable to 'IES Academy Pte Ltd', with the ***Title of The Event indicated clearly written on the back of the cheques***, and submitted with the duly completed registration forms to:

IES Academy@Jurong East
Devan Nair Institute for Employment and Employability,
80 Jurong East Street 21, #04-10
Singapore 609607

Confirmation of Registration

Confirmation of registration will be given at least 1 week before the commencement date via email. ***If you do not receive the said confirmation email, you are required to contact IESA at 6463 9211 during office hours.***

IESA reserves the right to allow only confirmed registrants to attend the Event.

Withdrawals/Refunds of Fees

Written notice ***at least 1 week in advance*** before the commencement of the event

Full course fee shall be refunded subjected to 4.5% transaction charge.

➤ **NO** refund otherwise.

No show of participant would not be accepted as a valid reason for withdrawal/refund.

One time replacement is allowed only if written notice is received by us at least 1 week before the commencement of the event. However, when an IES member is replaced by a non-member, the participant has to pay the difference in the relevant fees.

Cancellation/Postponement

Changes in Venue, Dates, Time and Speakers for the Events can occur due to unforeseen circumstances. IES reserves the full rights to cancel or postpone the Event under such circumstances without prior reasons. Every effort, however, will be made to inform the participants or contact person of any cancellation or postponement.

Fees will be refunded in FULL if any Event is cancelled by IESA.

PERSONAL DATA PROTECTION ACT

I consent to the processing by Institution of Engineers, Singapore of personal data, including sensitive personal data as defined in the Data Protection Act 2014, about me for the proper purposes of Institution of Engineers, Singapore (IES). I undertake to observe the provisions of the Data Protection Act 2014 in relation to any personal data I may myself hold and process as a Members of Institution of Engineers, Singapore, and I agree to indemnify Institution of Engineers, Singapore from liability for any claims or damages that may arise from the processing of this data. For more information kindly refer to [here](#).

Enquiries

For further enquiries, please contact IESA general office at Tel: 6463 9211.