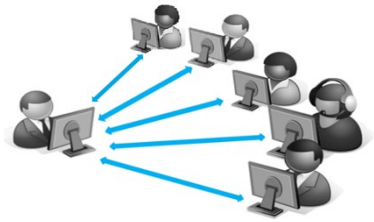
# Scaffold Design Basics and Safety

**(Virtual Classroom)**

**** Supported by UTAP & Skillsfuture Credit Funding****



IES Academy Virtual Classroom

## Introduction

One of the common accident sources at construction worksites is scaffolding, the temporary work platform and support needed to erect a permanent structure.

Most workplace accidents involve scaffolds in terms of structural collapse or of personnel being injured during the erection, use and dismantling of scaffolds.

This course will cover the common types and systems of scaffolds in Singapore, and discuss the characteristics of scaffolds and other temporary structures as against the permanent structures they help to build, to understand the reasons for special care of scaffolds.

Without going into actual design, the course will present the basics of structural behaviour so that participants can appreciate the vulnerable aspects of scaffolds. It will also identify the various hazards while working with and on scaffolds, and various safeguards against accidents and injuries from scaffold work.

## Objectives

To prepare site personnel to become aware of the importance of details during scaffold erection, use and dismantling, in relation to proper documentation of SWPs, incidents, etc. and direct and continuous monitoring of scaffolds and workers on them.

## Pre-requisites

Prior to attending this course, you should:

- Have a PC / laptop / tablet / smart phone with built-in or external webcam.
- Installed the Zoom client.
- Have Wi-Fi / high speed internet connection available.
- Receive an email with a link for you to submit a registration for webinar 1 week prior to the commencement.
- Receive an email with a link and password for you to join the webinar session after your registration is successful.

**Details**

**Date : 15 & 16 MAY 2025**

**(2 Days Course)**

**Time : 9AM - 12.45PM**

**Duration: 3.5 Hrs per day**

**(Must Attend 2 Days)**

**Delivery Mode: Zoom Webinar**

**CPD : 3 STU (Structural) / 2 STU(Safety) / 6 PDU/CEng / 7 SDU (To be confirmed)**

**Course Fee (Include GST):**
**IES Member: $272.50**
**Non-member: $316.10**

**SFC course code: TGS-2021005894**

E-certificate of Attendance will be awarded to participants who have completed the course survey and assessment.

**Target Audience**

- **Engineers**
- **Developers**
- **Builders**
- **Contractors**
- **Supervisors**
- **Health & Safety professionals**

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

Contact Person: Verline Chiam
DID: 64604241| Main Line: 6463 9211
E-mail: verline.chiam@iesnet.org.sg

## Course Outline

- The seven-hour format will cover: (i) A structural segment of three hours, devoted to generic concepts of structural behaviour and principles of design according to the scaffold code, and (ii) A safety segment of four hours, focussing on hazards, risks and their control, illustrated with case studies of failures and accidents.
- The course will be useful to engineers, developers, builders, contractors, supervisors and other occupational health and safety professionals who wish to learn or review the design and safety considerations of scaffold structures.
- It will be useful to fresh engineering graduates as an introduction to the real world of scaffold safety and design implementation in the workplace. Management cadre may also do well to understand the implications of scaffold design and safety, because it may help in reducing the consequent costs of accidents and other losses to the company and improve the safety culture in their organizations.

| ***Day*** | ***Session*** | ***Hours*** | ***Topic*** | ***Focus*** |
|---|---|---|---|---|
| ***1*** | ***1*** | ***9.00 – 10.45 am*** <br> ***(10.45 –11.00 am, Break)*** | Types and characteristics of scaffolds <br> Structural behaviour of scaffold components <br> Scaffold regulations and Code of Practice | ***Structural*** <br> ***(3 Hours)*** |
| | ***2a*** | ***11.00 am – 12.15 pm*** | Basics of structural design and erection of scaffolds <br> Special features of scaffold erection | |
| | ***2b*** | ***12.15 – 12.45 pm*** | Scaffold failures due to unsafe practices | ***Safety*** <br> ***(4 Hours)*** |
| ***2*** | ***1*** | ***9.00 – 10.45 am*** <br> ***(10.45 –11.00 am, Break)*** | Safety aspects of supported and suspended scaffolds <br> Bracing for safety against instability and sway <br> Safe erection, use, and dismantling of scaffolds | |
| | ***2*** | ***11.00 am – 12.45 pm*** | Code Recommendations for scaffold safety <br> Human factors in safe erection and dismantling <br> Case studies of scaffold failures | |
| *The first FIVE topics will pertain to scaffold structure (3 hours) and the second SEVEN topics will pertain to scaffold safety (4 hours)* | | | | |

# Trainers' Profile

**Professor N. Krishnamurthy**
*B.Sc., B.E.(Civil), M.S.(CE), Ph.D.*
*F.ASCE, F.SSSS, F.IE(India)*
*M.ASSP, M.IE(Singapore), M.MES, M.ACCE(I)*

Professor Krishnamurthy is currently Safety Consultant and Trainer in Singapore. He was an Accredited Trainer and Consultant of the Singapore Ministry of Manpower to teach certain modules of workplace safety and risk management, and served as Chief Facilitator for safety-related workshops conducted by MOM and Singapore Contractors Association Limited (SCAL). He has also consulted for MOM, WSHC and WSHI, and teaches safety-related subjects at local universities and academies.

He has more than six decades of teaching, research, and consultancy experience, including teaching short courses for practicing engineers, in U.S.A., Singapore, India, and Hong Kong.

In U.S.A. he held civil engineering professorial positions in three American universities, in the last of which he was Department Chairman. He has also held senior positions in the National University of Singapore, and the Mysore University in India. He teaches at the University of Newcastle in Australia at their Singapore campus. He is also Distinguished Academic Visiting Expert at his Alma Mater (National Institute of Engineering) in India.

His research interests have been in structural engineering and computer applications to civil engineering. He has written five books including the latest, *"Introduction to Enterprise Risk Management"*, *and 'Essays on Forensic Engineering"*, co-authored a resource book on structural welding and other publications, and published over a hundred papers.

Over the last many years in Singapore Professor Krishnamurthy has been focussing on safety, design, and erection of temporary structures such as scaffolding, formwork and falsework, construction productivity and working safely at height. He is deeply involved in workplace safety and risk management, as well as investigations of temporary structure failures and workplace accidents.

Relevant credentials for Prof Krishna to teach this course will be the following:

- Has been teaching 'Working Safely at Heights', 'Scaffold Design & Safety', 'Formwork Design & Safety', etc. at IES;
- Was involved in investigation of scaffold and formwork failures and accidents, and serving as expert witness for these accidents;
- Edited a Guidebook for Scaffolds for SCAL Academy; and,
- Taught 'Safety and Design of Temporary Structures' to practising engineers in Singapore and HongKong.

# Scaffold Design Basics and Safety 41st Run

(Virtual Classroom)

**** Supported by UTAP Only& Skillsfuture Credit Funding****

**Date: 15 & 16 MAY 2025** (2 Days course) **Time: 9AM - 12.45PM** (Must Attend 2 Days)

**Delivery Mode:** Zoom Webinar

**Fee (include GST): IES Member: $272.50 Non-member: $316.10**

Please register online/email the completed form by **6 MAY 2025 before 3PM** to:

Contact Person: Verline Chiam, verline.chiam@iesnet.org.sg, Tel: **6460 4241**

**IES Academy@Jurong East**

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

## Participant Details

***Name** : _____ ***NRIC** : _____

(Please written in BLOCK Letter)

Company : _____ ***Designation**_____

***Billing Address** : _____

(For mailing of invoice and receipt)

***Postal Code** : _____ Sex : _____Male / Female _____

***Handphone No.** : _____ ***Your Email**_____

(For sending of confirmation email, preferable personal unless company sponsored)

**Please indicate**: ☐ IES members IES M'ship No.: _____ P.E/Safety Officer No.: _____

☐ Non-members

❑ Sponsored by company (*Please indicate the Contact person detail)*

## Contact Person Details *(*HR or Finance if sponsored by company or if applicable*)*

#Name : _____ #Designation : _____

#Contact No. : _____

#Email : _____

## Payment Details

Bank Transfer / E-payment :_____ Amount ($):_____

**~ All Fees are inclusive of 9 % GST.**

□ Using SkillsFutureCredit to pay for course fee (Singaporean & **self-paying ONLY**)

~ 100% attendance is compulsory, else no Cert.

## 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 Engineers Singapore Pte Ltd unless otherwise invoice to company.

All registrations must be submitted with duly completed registration form.

### Closing Date

The closing date of the event will be 1 week prior to event commencement date or earlier.

### 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.

**UTAP (Union Training Assistance Programme)** is an individual skill upgrading account especially for NTUC members. As a member, you enjoy UTAP funding at 50% of the unfunded course fee capped at $250 every year.
Please visit HERE for more information on UTAP claim.

**SkillsFuture Credit (SFC)** "All Singaporeans aged 25 and above can use their $500 SkillsFuture Credit from the government to pay for a wide range of approved skills-related courses. Visit the SkillsFuture Credit website (www.skillsfuture.sg/credit) to choose from the courses available on the SkillsFuture Credit course directory."

Please visit HERE for more information on SFC & UTAP claim.

### 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.