

# Module 2 Construction of Underground & Related Structures – Earth Retaining Structures (2<sup>nd</sup> Run)

(Virtual Classroom)



**\*\*Supported by UTAP to be confirmed\*\***



IES Academy Virtual

## Introduction

Underground and related structures are of great significance to the local construction industry. Many structures have to be built below ground and their design and construction are of importance to those in the civil engineering profession.

Resident Engineers and Resident Technical Officers need to be familiar with the construction and supervision of underground and associated structures, as such foundations, basements, tunnels and earth-retaining structures.

## Objectives

The specific objective of Module 2 on “Earth Retaining Structures” is to familiarize participants with various types of earth retaining structures adopted in Singapore and the region. This module is useful to those who are involved in the construction and supervision of earth retaining structures used in civil engineering and building projects.

## Pre-requisites

Prior to attending this course, you should:

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

## Details

**Date** : 31 October 2020

**Time** : 9.00 a.m. – 12.15p.m.

**Duration: 3 Hours**

**Delivery Mode: Zoom Webinar**

**CPD** : 3 PDU / 3 STU  
(To be Confirmed)

**Course Fee (include GST):**  
**IES Member: \$ 102.70**  
**Non-member: \$ 119.80**

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

## Target Audience

- Residential Engineers
- Residential Technical Officer

## **IES Academy@Jurong East**

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

Contact Person: Joyce Foo  
DID: 6461 1238 Main Line: 6463 9211  
E-mail: [joyce.foo@iesnet.org.sg](mailto:joyce.foo@iesnet.org.sg)

## **Course Outline**

1. Gravity retaining walls
2. Gabion retaining walls
3. Crib walls
4. Mechanically Stabilized Earth (MSE) walls
5. Soil nailed walls
6. Ground anchored walls
7. Contiguous and secant pile walls
8. Sheet piled walls
9. Diaphragm walls
10. Soldier piles and timber lagging walls
11. Cassion Construction & Ground Improvement in retaining Structure

## **Trainers' Profile**

Er. Wong Pui Fun, Joanne is the Deputy Managing Director of Meinhardt Infrastructures Pte Ltd. She graduated from Imperial College, University of London with Master Degree in Concrete Structure. She is also an accredited Adjudicator in Singapore. She has more than 30 years of experience in the field of Civil & Structural Engineering which include commercial, residential buildings, infrastructure projects etc. She specialises in building & transit structure, reinforced concrete, precast concrete, prestressed concrete and steel structure. She also has extensive experience in underground building design and construction. Some of the iconic projects that she carried out are LTA T305 Katong Park Station and Tunnel, Tai Seng Facility Building, 313@somerset, LTA project Down Line 3, and Suntec City, etc.

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Date: 31 October 2020

Time: 9.00 a.m. – 12.15 p.m.

Delivery Mode: Zoom Webinar

Fee after 20% off (include GST): IES Member: \$102.70 Non-member: \$119.80

Please register online/email the completed form by 23/10/2020 before 5.00 p.m. to:

Contact Person: Joyce Foo

IES Academy@Jurong East

80 Jurong East Street 21, #04-10

Devan Nair Institute for Employment and Employability

Singapore 609607

Tel: 6461 1238

## Participant Details

\*Name : \_\_\_\_\_ \*NRIC : \_\_\_\_\_  
(Please written in BLOCK Letter)

Company : \_\_\_\_\_ \*Designation \_\_\_\_\_

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

\*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.: \_\_\_\_\_ P.E. No.: \_\_\_\_\_ (if applicable)

Non-members Affiliated member: \_\_\_\_\_

Sponsored by company (Please indicate the Contact person detail)

## Contact Person Details (if different from participant)

#Name : \_\_\_\_\_ #Designation : \_\_\_\_\_

#Contact No. : \_\_\_\_\_ Fax : \_\_\_\_\_

#Email : \_\_\_\_\_

## Payment Details

Bank / Cheque No : \_\_\_\_\_ Amount (\$): \_\_\_\_\_

~ All Fees are inclusive of 7 % GST.

## 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.

### **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.