

Module 1 & 2

Construction of Underground & Related Structures-

- *Piling & Foundations*
- *Earth Retaining Structures*
(16th run)



(For Resident Engineers & Resident Technical Officers)

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 1 on “Piling & Foundations” is to familiarize participants with piling methods adopted in Singapore and the region and how to supervise the installation of piles. The sub-topic on foundations will provide participants with knowledge on various types of foundations and their construction and supervision.

Course outline

- 1) Load-bearing piles (displacement and replacement piles)
- 2) Steel sheet piles
- 3) Secant piles and contiguous piles
- 4) Load testing of load-bearing piles
- 5) Underpinning
- 6) Piled foundations (pile caps, piled raft foundations)
- 7) Shallow foundations (strip and pad footings)
- 8) Specifications
- 9) Introduction to various types of Earth Retaining Structures
- 10) Concepts, applications and installation of above earth-retaining structures
- 11) Introduction, application and installation of ground anchors
- 12) Testing of soil nails and ground anchors
- 13) Construction inspection and performance monitoring
- 14) Specifications

Speaker's Profile

Er. Wong Pui Fun, Joanne is the Associate 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 25 years of experience in the field of Civil, Structural and Building 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 blast design and demolition work. Some of the iconic projects that she carried out are 313@somerset, Queenstown redevelopment RC21, LTA project Down Line 3, and Suntec City, etc.

Course Schedule

Time	Event
8.30 am - 9.00am	<i>Registration</i>
9.00 am - 9.20 am	Load-bearing piles (displacement and replacement piles)
9.20 am - 9.40 am	Steel sheet piles
9.40 am - 10.00 am	Secant piles and contiguous piles
10.00 am - 10.20 am	Load testing of load-bearing piles
10.20 am - 10.40 am	<i>Morning Tea Break</i>
10.40 am – 11.00 am	Underpinning
11.00 am - 11.30 am	Piled foundations (pile caps, piled raft foundations)
11.30 am - 11.50 am	Shallow foundations (strip and pad footings)
11.50 am - 12.30 pm	Specifications
12.30 pm - 1.15 pm	<i>Lunch Break</i>
1.15 pm - 1.45 pm	Introduction to various types of Earth Retaining Structures
1.45 pm - 2.15 pm	Concepts, applications and installation of above earth-retaining structures
2.15 pm - 2.45 pm	Introduction, application and installation of ground anchors
2.45 pm - 3.15 pm	Testing of soil nails and ground anchors
3.15 pm - 3.30 pm	<i>Afternoon Break</i>
3.30 pm - 4.00 pm	Construction inspection and performance monitoring
4.00 pm - 4.30 pm	Specifications

Registration Form

Module 1 & 2 – Construction of Underground & Related Structures

. Pilling & Foundations (16th Run)

. Earth Retaining Structures (16th Run)

Date : 11 May 2019 (Saturday)
Time : 9 am – 4.30 pm
Venue : IES Academy@Jurong East
80 Jurong East Street 21, #04-10, Devan Nair Institute e2i, S (609607)
Fees * : \$246.10 (IES Members) / \$288.90 (Non-Members)
CPD Programme : 6 STU (Structural) / 6 PDU (Both to be confirmed)
Closing date for Registration : 30 Apr 2019 or till class is full (whichever comes first)
Course Coordinator : Jessie Tan
jessie.tan@iesnet.org.sg

Please register online at <https://www.ies.org.sg/Home>, the registration is on first come first served basis

Participant Details

Name : _____ NRIC : _____

Company : _____ Designation: _____

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

Address 2 : _____
(For mailing of Certificate)

Postal Code : _____ Sex : _____ Male / Female

Mobile : _____ Fax : _____

Email : _____

Please indicate : IES member IES M'ship No.: _____ P.E. No.: _____
 Non-member Special Meal Request (Vegetarian)

Date : _____ Signature : _____

Contact Person Details (if different from participant)

Name : _____ Designation: _____

Tel : _____ Fax: _____

Email : _____

Payment Details

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

Sponsored by company

Invoice to company

* All Fees are inclusive of 7 % GST.

Cheque should be made payable to: "Engineers Singapore 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 : _____

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 & Payment

The closing date of the event will be 1 week prior to event commencement date. Cheques should be crossed 'A/C payee only' and made payable to **ENGINEERS SINGAPORE PTE LTD**, with the Date of event, Title of The Event and participants' name indicated clearly on the back of the cheque, and post to:

Att: Jessie Tan
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. IESA 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.

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

By registration, you consent to the processing by Institution of Engineers, Singapore of personal data, including your sensitive personal data as defined in the Data Protection Act 2014 for the proper purposes of Institution of Engineers, Singapore (IES). You undertake to observe the provisions of the Data Protection Act 2014 in relation to any personal data you may hold and process as a Members of Institution of Engineers, Singapore, and you 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: www.ies.org.sg/About-IES/PDPA.

Enquiries

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