

# IES/ACES PROFESSIONAL COURSE ON EROSION CONTROL (23<sup>RD</sup> INTAKE)

Jointly organized by:



**IES GREEN PLAN**  
*Planning the Singapore Green Plan 2020*



Supported by:



**Date** : 12 July 2024 to 7 October 2024 (Tentative schedule)  
**Time** : 6.30pm - 9.30pm (Various weekday nights)  
**Duration** : 14 Sessions  
**Delivery Mode** : Classroom  
**Venue** : IES Academy@Jurong East  
 Devan Nair Institute for Employment and Employability,  
 80 Jurong East Street 21, #04-10 Singapore 609607  
**CPD Programme** : 24 PDUs (To be confirmed)  
**Organising Committee** : Erosion Control Sub-Committee

IES/ACES Qualified Erosion Control Professional (QECP) Course Reference Number: TGS-2022013958	Individual Sponsored		Company Sponsored			
			Non-SME		SME	
	Before GST	With GST	Before GST	With GST	Before GST	With GST
Full Course Fee (For foreigner)	\$2,550.00	\$2,779.50	\$2,550.00	\$2,779.50	\$2,550.00	\$2,779.50
For Singapore Citizens & PRs: (a) Individually-sponsored trainees aged 21-39 years (b) Company-sponsored trainees aged 39 years & below	\$1,275.00	\$1,504.50	\$1,275.00	\$1,504.50	\$765.00	\$994.50
For Singapore Citizens aged 40 years and above	\$765.00	\$994.50	\$765.00	\$994.50	\$765.00	\$994.50

**\*\*Subjected to SSG grant assessment**

**\*SSG Fund and eligibility criteria**

- 1. Payment type: - Nett Fee**
- 2. Training organization name: -IES ACADEMY PTE LTD**
- 3. Course Fee and Absentee Payroll Funding and eligibility please click here.**
- 4. Trainee must have achieved at least 75% attendance.**
- 5. The trainee must have sat for and passes all the assessments or the trainee will have to pay back the funded amount to the training provider if the assessment result is "Not Yet Competent".**
- 6. For participants under self-sponsor please approach the course coordinator for more information on Skillsfuture SG (SSG) Fund and SkillsFuture Credit (SFC) Fund.**
- 7. Training provider will submit the grant application via SSG Training Provider Gateway.**
- 8. You may click [here](#) for Terms and Conditions for funding.**

**Target Audience**

**Professional Engineers (Civil)**

The professional course on erosion control will lead to accreditation of professional engineers as Qualified Erosion Control Professionals (QECPs).

The duties and responsibilities of a QECP include designing erosion and sedimentation control measures in construction sites and preparing plans. Submission plans to PUB shall be submitted by a registered QECP.

**Introduction**

This course gets the participants to understand the basics of erosion and sedimentation measures to reduce turbidity in construction site water runoff to meet PUB requirements. Participants will be learnt about the quantitative methods for determination of erosion control and sedimentation as well as procedures to create an ECM Plan for typical construction sites. Participants will also be learnt about how to incorporate inspection and maintenance aspects of erosion control and sedimentation measures into an ECM Plan.

**Objective**

- Understand the legislation related to earth control measures for construction sites.
- Know the role of Qualified Erosion Control Professionals in construction industry
- Understand the basic concepts of erosion control
- Know how to calculate soil loss for construction sites and concentration of total suspended solids in water leaving construction sites
- Understand the basic concepts of sediment control
- Know how to design basic sedimentation containment system
- Understand how to use Best Management Practices for earth control measures to create an ECM plan
- Know the procedures for inspection, monitoring and maintenance of earth control measures and how to incorporate into an ECM plan
- Understand how to test the concentration of total suspended solids in water leaving a construction site.

## **COURSE OUTLINE**

### **Section 1: Introduction to Erosion and Sedimentation Control (3 hour)**

- Overview of course, objectives, expectations and accreditation process
- Regulations and legislation
- Course details and structures
- Roles of Qualified Erosion Control Professional (QECP) and other stakeholders in erosion and sedimentation control at construction sites
- Typical types of construction and areas of concern

### **Section 2: Basic Methods of Erosion Control (3 hours)**

- Fundamentals of earth control
- Erosion on construction sites
- Mechanics of erosion and erosion controls
- Protecting surface: vegetation stabilization and Mulches
- Protecting surface by others means
- Watershed management and surface run-off control
- Costing for earth control measures - erosion control measures

### **Section 3: Calculations of Soil Loss and Sediment Delivery (3 Hours)**

- Background to soil loss calculations
- Formulations for soil loss calculations (USLE, RUSLE, MUSLE etc)
- Calculating Total Suspended Solids in runoffs
- Basic design (accounting for effect of erosion and sedimentation control measures)
- Complete example for typical construction site

### **Section 4: Basic Methods of Sedimentation Control (6 Hours)**

- Concept of sediment yield and delivery ratios
- Classification of sediment control practices
- Surface drainage system
- Subsoil drainage
- Sedimentation trap: Design and details
- Sedimentation basin: Design and details
- Treatment plants (chemical/membrane type): Basic introduction
- Costing for Earth Control Measures – sedimentation control measures

### **QUIZ 1: Assessment of understanding of Section 1 to 4**

**Open book assessment to be conducted at IES Academy**

### **Section 5: BMPs and Erosion and Sedimentation Control Plan (3 Hours)**

- What is BMPs and BAT
- Principles of Erosion and Sedimentation Control Plan (ESCP)
- Planning process of ESCP
- Development of an effective ESCP
- Case study of typical ESCP
- Costing for ECM elements

### **Section 6: Inspection and maintenance of BMPs (6 Hours)**

- Inspection of BMPs
- Inspection requirements and frequency
- Maintenance of BMPs

### **QUIZ 2: Assessment of understanding of Section 5 to 6**

**Open book assessment to be conducted at IES Academy**

**Project Preparation and Presentation**

## **CVs of LECTURERS / FACILITATORS**

**Er. Dr. Chew Soon Hoe**, SrMIES, MASCE, MIGS, PEng (Singapore)

Dr Chew Soon Hoe received his PhD from University of California at Berkeley. He is currently an Assistant Professor in the Department of CE, NUS, and also holds the position of Deputy Director of the Centre for Protective Technology, NUS. His research interests include geosynthetics, slope engineering, land reclamation, soil improvement, numerical modeling in geotechnical engineering and geo-environmental engineering. In the past 15 years, he has conducted extensive research on geosynthetics, especially on the reinforcement, filtration and drainage applications of geosynthetics material. His particular interest is in the evaluation of the suitability as well as the proper design philosophy of the geosynthetics material in local soil conditions and construction practices. His other research interests include survivability of geotextiles, geosynthetics for erosion control, vertical drains testing and applications.

He has been very actively promoting the use of geosynthetics in civil engineering construction, and has been engaged as consultant to government agencies and private consultants and contractors on geosynthetics related projects and construction in this region. He is also actively consulted in general area of geotechnical engineering including slope stability, pile foundation and excavation related problem. He is currently the President of the Southeast Asia Chapter of the International Geosynthetics Society. He has published very widely and was invited to deliver a number of keynote and special lectures, including in the GaoAsia 2000 conference in KL and the 7TH International Geosynthetics Conference in Nice, France, 2002, 4<sup>th</sup> Asia Regional Geosynthetics Conference in Shanghai, 2008, and 4<sup>th</sup> Europe Regional Geosynthetics Conference in Edinburgh, 2008.

**Er. Teo Ee Huat**, BE (Hons), M.Ed, MSc (Civil), Msc (International Construction Management), PGD (Construction Management), P.E (Singapore), MIES

Er. Teo Ee Huat has extensive working experience in the industry and spent 6 years working in design and supervision of wastewater/water treatment plant related projects, as well as hospitality, commercial and transportation projects in Singapore. He also worked in wastewater/water treatment plants in Malaysia, Brunei, Bintan Island and the neighbouring islands. He is a Singapore registered Professional Engineer and Qualified Erosion Control Professional.

**PROGRAMME**

<b>Date</b>	<b>Module</b>	<b>Lecturers / Facilitators</b>
12 July 2024 (Fri) 6.30pm – 9.30pm	Introduction by Course Coordinator Preventing Silty Water at Our Waterways	Er. Teo Ee Huat PUB
29 July 2024 (Mon) 6.30pm – 9.30pm	Section 1: Introduction to Erosion and Sedimentation Control	Dr. Chew Soon Hoe / Er. Teo Ee Huat
5 August 2024 (Mon) 6.30pm – 9.30pm	Section 2: Basic of Erosion Control	Dr. Chew Soon Hoe / Er. Teo Ee Huat
12 August 2024 (Mon) 6.30pm – 9.30pm	Section 3: Calculation of Soil Loss and Sediment Delivery	Dr. Chew Soon Hoe / Er. Teo Ee Huat
19 August 2024 (Mon) 6.30pm – 9.30pm	Section 4: Basics of Sedimentation Control	Dr. Chew Soon Hoe / Er. Teo Ee Huat
23 August 2023 (Fri) 6.30pm – 9.30pm	Quiz 1: Open Book Test on Section 1 to Section 4	Dr. Chew Soon Hoe / Er. Teo Ee Huat
26 August 2024 (Mon) 6.30pm – 9.30pm	Section 5: - BMPs and Erosion and Sedimentation Control Plan	Er. Teo Ee Huat
28 August 2024 (Wed) 6.30pm – 9.30pm	Section 6: Inspection and Maintenance of BMPs	Er. Teo Ee Huat
30 August 2024 (Fri) 6.30pm – 9.30pm	Section 6: Inspection and Maintenance of BMPs	Er. Teo Ee Huat
2 September 2024 (Mon) 6.30pm – 9.30pm	Quiz 2: Open Book Test on Section 5 to Section 6	Dr. Chew Soon Hoe / Er. Teo Ee Huat
10 September 2024 (Tue) 6.30pm – 9.30pm	Project group working session	Panel
17 September 2024 (Tue) 6.30pm – 9.30pm	Project group working session	Panel
24 September 2024 (Tue) 6.30pm – 9.30pm	Project group working session	Panel
30 September 2024 (Mon) 6.30pm – 9.30pm	Project presentation	Panel
2 October 2024 (Wed) 6.30pm – 9.30pm	Project presentation	Panel
4 October 2024 (Fri) 6.30pm – 9.30pm	Project presentation	Panel
7 October 2024 (Mon) 6.30pm – 9.30pm	Reassessment	Panel

# Registration Form

## IES/ACES PROFESSIONAL COURSE ON EROSION CONTROL 23<sup>RD</sup> INTAKE)

Date : 22 July 2024 to 7 October 2024 (Tentative schedule)

Time : 6.30 pm – 9.30 pm (Various weekday nights)

Venue : IES Academy@Jurong East

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

Fee (include 9% GST): \$2,779.50

**\*\*For participants under self-sponsor please approach course coordinator for more information on Skillsfuture SG (SSG) Grant and SkillsFuture Credit (SFC) grant.**

Please register e-mail/fax the completed form **by 8 July 2024 before 3pm** to:

Att: Christine Lau  
IES Academy @ Jurong East  
80 Jurong East Street 21, #04-10  
Devan Nair Institute for Employment and Employability  
Singapore 609607  
Tel: 6463 9211 Fax: 6560 6030  
Email: [christine.lau@iesnet.org.sg](mailto:christine.lau@iesnet.org.sg)

### Participant Details

<b>*Name</b> (as in NRIC):	Mr./Ms./Er.			
<b>*ID Number:</b>	<b>*ID Type:</b>	<input type="checkbox"/> Singapore Pink Identification Card <input type="checkbox"/> Singapore Blue Identification Card <input type="checkbox"/> FIN/Work Permit/SAF 11B <input type="checkbox"/> Foreign Passport <input type="checkbox"/> Others		
<b>*Date of Birth</b> (YYYYMMDD):	<b>*Gender:</b>	Male / Female	<b>*Race:</b>	Chinese / Malay / Indian / Eurasian / Others, pls specify _____
<b>*HP No.:</b>	<b>*Email:</b>		<b>*Work:</b> <b>*Personal:</b>	
<b>*Company Name:</b>	<b>*Designation:</b>			
<b>*Mailing Address:</b>				

Please indicate: P.E. No.: \_\_\_\_\_ (if applicable)

Vegetarian

### Contact Person Details (for company sponsor)

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

Mobile No. : \_\_\_\_\_ Fax : \_\_\_\_\_

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

### Payment Details

Tick here if sponsored by company, Company UEN no.: \_\_\_\_\_

Tick here if Self-Sponsor

#### Note:

- \*Required field for SSG Funding and SSG Training Quality and Outcomes Measurement Survey
- \*Important note: SSG funding required applicant to pass all the assessments or the applicants will have to pay back the funded amount to the training provider if the assessment result as "Not Yet Competent".
- All Fees are inclusive of 8 % 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: \_\_\_\_\_

## **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 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.

### **SSG Funding (SkillsfutureSG)**

Singapore citizens or permanent residents (PR) are eligible for SSG funding and subject to terms and conditions. The trainee has attained a minimum of seventy-five percent (75%) attendance for the Funded Course. The trainee must have sat for and passes all the assessments or the trainee will have to pay back the funded amount to the training provider if the assessment result is "Not Yet Competent".

The training provider will submit the grant application via SSG Training Provider Gateway (TPG).

You may click [here](#) for the Terms and Conditions for funding.

### **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.

### **Others**

\* Reprint of Certificate of Completion is subjected to \$54 (inclusive of 8 % GST) administrative charges

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