

# Certificate of Competency (CoC) In Operation & Maintenance of Silty Water Treatment Plants (SWTPs) for Construction Site Personnel

## **\*\* UTAP Funding\*\***

### **INTRODUCTION**

When it rains, surface runoff passing through bare earth surfaces at construction sites will generate silty water. Builders shall provide adequate earth control measures (ECM) on site including **Silty Water Treatment Plants (SWTPs)** to treat the silty water before discharge into waterways.

Builders shall engage a Qualified Erosion Control Professional Engineer (QECP) to design and supervise the implementation, operation, and maintenance of the ECM system. The ECM system shall comply with the requirements in the Code of Practice on Surface Water Drainage including the discharge standard of not exceeding Total Suspended Solids (TSS) limit of 50 mg/l in concentration before discharging into public drains. Builders shall submit the detailed ECM proposal, endorsed by their QECP, to PUB, Singapore's National Water Agency, prior to the commencement of earth works.

SWTPs are installed as part of the ECM system to treat the silty water to legal limits before discharging into waterways. The SWTPs are the 'heart' of the ECM system to ensure that the treated silty water is continuously treated to legal limits. Therefore, it is critical that QECPs, ECMOs, operators of SWTPs and other construction site personnel have a basic knowledge and understanding on the types of SWTPs, their essential features, functions, operations, maintenance, basic troubleshooting etc to ensure SWTPs are operated properly and safely and well maintained at all times.

This 1-day course provides participants with a comprehensive overview of the operation and maintenance of SWTPs, addressing both the theoretical principles and practical applications. It equips participants with the knowledge and skills necessary to operate and maintain efficient, safe, and compliant SWTPs in dynamic construction environments.

### **COURSE OBJECTIVE**

Upon completion of the course, participants will be able to understand and appreciate the challenges associated with SWTPs and the critical role of treatment in ensuring environmental compliance and operational efficiency and safety.

### **SCOPE**

- Introduction to Silty Water Treatment Plants (SWTPs) and Regulatory Requirements
- Chemical Treatment Plants (CTPs)
- Membrane Treatment Plants (MTPs)
  - Features / Specifications, Process Description, Factors Affecting Capacity and Performance, Operations & Maintenance, Monitoring & Troubleshooting.
- Automation & SMART Mobile Application
- Safety – Safety Procedures for Operations and Maintenance
- Practical Operations of SWTPs
- Written & Practical Assessments

### **TARGET AUDIENCE**

Qualified Erosion Control Professionals (QECPs), Earth Control Measures Officers (ECMOs), Environmental Control Officers (ECOs), Site Supervisors, Site Occupier/Owner of construction sites, Site Managers/Executive, Maintenance Personnel, Contractors, RTOs and anyone who wishes to learn more about SWTPs for construction industry.

## **COURSE METHODOLOGY / DURATION / LANGUAGE**

1 full-day, classroom-based plus outdoor hands-on operation with Chemical & Membrane Treatment Plants followed by Written and Practical Assessments in English

## **COURSE REQUIREMENT**

Participant must have attended and passed the exam for Certificate of Competency (CoC) in Earth Control Measures (ECM) for Construction Site Personnel.

## **COURSE ASSESSMENT**

Participants will be required to take written (open book) and practical assessments on the same day.

-E-Cert of **Certificate of Attendance** will be issued to participants who meet 100% attendance one week after course date via email.

-6 weeks from course date, Result Slip in softcopy, which is also **Certificate of Competency** will indicate P as Pass or F as Fail, will be emailed to all who attempted the assessment and made full payment for the course fee.

**\*\***For registered participants, your Identification Card (IC) / Work Pass will be needed to be presented for verification purposes during the assessment.

**\*\*** Non-scientific calculator can be used during the test, no other electronic devices are allowed.

## **COURSE FEES**

IES Members: \$628      Non IES Members: \$672

## **COURSE LOCATION**

IES Main Office

70 Bukit Tinggi Road, Singapore 289758

## **MEAL**

Halal meals will be provided. If you need vegetarian meals, please inform via email at least 3 working days before course date.

## **CV OF LECTURER**

### **Mr V. Rajandran**

Dip Civil Engrg, B. App. Sc (Const Mgt) (Hons), MSc (Int'l Const Mgt), ACTA, DACE  
Public Utilities Board (PUB)

Mr V. Rajandran has been supervising and managing drainage construction projects for over 30 years. He was involved in the promotion and implementation of Earth Control Measures (ECM) at construction sites including the enforcement of Sewerage and Drainage Act 1999 and its subsidiary legislations. He was also involved in the sourcing of new products and technologies for ECM and played a major role in procuring the first chemical silty water treatment plant to showcase the technology to the local construction industry.

## PROGRAMME STRUCTURE:

### Certificate of Competency (CoC) in Operation & Maintenance of Silty Water Treatment Plants (SWTPs)

COURSE OUTLINE		
S/No	Time / Duration (Hours)	Topics
1	8.30am to 9.00am (30mins)	<b>1.0 Introduction</b> <ul style="list-style-type: none"> <li>Erosion and Sediment Control / Turbidity</li> <li>Why the need for SWTPs</li> <li>Types of SWTPs</li> </ul>
2	9.00am to 10.30am (90mins)	<b>2.0 Chemical Treatment Plants (CTPs)</b> <ul style="list-style-type: none"> <li>Features / Specifications</li> <li>Process Description - Pre-Treatment, Chemical Mixing &amp; Dosing, Coagulation, Flocculation, Sedimentation &amp; Desludging</li> <li>Operation, Maintenance &amp; Decommissioning</li> </ul>
10.30am to 10.45am (15mins) <b>TEA BREAK</b>		
3	10.45am to 11.45am (60mins)	<ul style="list-style-type: none"> <li>Factors affecting Capacity and Efficiency of CTPs</li> <li>Monitoring &amp; Trouble Shooting</li> </ul>
4	11.45am to 12.45pm (60mins)	<b>3.0 Membrane Treatment Plants (MTPs)</b> <ul style="list-style-type: none"> <li>Features / Specifications</li> <li>Process Description - Filtration, Flushing &amp; Backwash</li> <li>Operation, Maintenance &amp; Decommissioning</li> <li>Factors affecting Capacity and Efficiency of MTPs</li> <li>Monitoring &amp; Trouble Shooting</li> </ul>
12.45pm to 1.45pm (60mins) <b>LUNCH</b>		
5	1.45pm to 2.15pm (30mins)	<b>4.0 Automation &amp; SMART Mobile Application</b> <ul style="list-style-type: none"> <li>Remote Monitoring &amp; Control of SWTPs</li> </ul>
6	2.15pm to 2.45pm (30mins)	<b>5.0 Safety</b> <ul style="list-style-type: none"> <li>Safety Procedures for Operations &amp; Maintenance</li> <li>Chemicals – Material Safety Data Sheets (MSDS)</li> </ul>
7	2.45pm to 4.45pm (120mins)	<b>6.0 Practical Operations of SWTPs</b> <ul style="list-style-type: none"> <li>Chemical Treatment Plant (CTP)</li> <li>Membrane Treatment Plant (MTP)</li> <li>Trouble Shooting</li> </ul>
4.45pm to 5.00pm (15mins) <b>TEA BREAK</b>		
8	5.00pm to 6.30pm (90mins)	<b>Assessments</b> <ul style="list-style-type: none"> <li>Practical Assessment</li> <li>Written Assessment</li> </ul>
<b>(Total 8.5 hours)</b>		
Course Evaluation		
<b>7 hours of training (excluding assessments)</b>		

## Registration Form

### **Certificate of Competency (CoC) in Operation & Maintenance of Silty Water Treatment Plants (SWTPs) – 8<sup>th</sup> Run \*\* UTAP Funding\*\***

Date : 22 JULY 2025 (1day) Time: 8.30am to 6.30pm  
CPD Programme : **2 STU (Safety)/ 7 PDU (QECF) - Confirmed**  
**7 PDU/ 7 CEng – To be Confirmed**  
Venue : **IES Main Office, 70 Bukit Tinggi Road, Singapore 289758**  
Course Fee : \$628 (IES members); \$672 (Non-members) (**Course fee to be confirmed**)  
Course Coordinator : Verline Chiam, Tel: 64604241 Email: [verline.chiam@iesnet.org.sg](mailto:verline.chiam@iesnet.org.sg)  
80 Jurong East Street 21, #04-10 Devan Nair Institute For Employment and Employability, (S) 609607  
Last Date of Registration : 14 JULY 2025 or **earlier if registration is full**

## **Participant Details**

Name(Mr/Ms) : \_\_\_\_\_ NRIC/FIN No : \_\_\_\_\_  
Company : \_\_\_\_\_ Designation : \_\_\_\_\_  
Billing Address : \_\_\_\_\_  
Postal : \_\_\_\_\_  
Email : \_\_\_\_\_  
Hp no : \_\_\_\_\_ RE/RTO/PE/CEng no.: \_\_\_\_\_  
**Please tick to indicate:** ☐ IES Member No ☐ Non-members ☐ Sponsored by Company  
☐ **Vegetarian**

## **Contact Person (If you are sponsored by your company, For HR or Finance Dept)**

Name : \_\_\_\_\_ Designation : \_\_\_\_\_  
Tel : \_\_\_\_\_ Email: \_\_\_\_\_  
Payment: BANK TRANSFER/  
E-Payment: \_\_\_\_\_ Amount: \_\_\_\_\_

- Cancellation or withdrawal from course must be 7 working days before course date via email
- **Course fee shown, includes 9% GST**
- I have **successfully completed** the course COC ECM@ IESA on \_\_\_\_\_ (course date)
- **100% attendance is compulsory for all participants, else no cert.**

## **Acceptance of Terms & Conditions for Registration of IES Academy Courses / Events**

I agree to abide by the Terms & Conditions for Registration of IES Academy courses / 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.

### **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 (7 working days ) 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 ***(7 working days )*** 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: [www.ies.org.sg/PDPA](http://www.ies.org.sg/PDPA).

### **Enquiries**

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