



ABC WATERS PROFESSIONALS COURSE ELECTIVE MODULE EU2 (Design, Construction and Maintenance of Constructed Wetlands – Horizontal Flow and Floating Wetlands) 8th Run

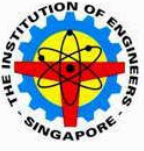
Organised By: IES Academy Pte Ltd



| | | |
|-----------------------|---|--|
| Date of Course | : | 25 September 2023, Monday |
| Time of Course | : | 9.00am to 5.45pm |
| CPD Programme | : | PDU (QECP/ABC) / PDU / CPD (SILA) - TBC |
| Venue | : | IES Academy@Jurong East 80 Jurong East St 21 #04-10 S(609607) |
| Fee | : | \$378.00 (IES/SIA/SILA Members) \$464.40 (Non Members) |

Supported by:





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INTRODUCTION

Two-thirds of Singapore functions as local catchment areas. Under the Active, Beautiful, Clean Waters (ABC Waters) Programme, PUB has embarked on a journey to harness the full potential of our waters by integrating them with our environment. Over the past 2 to 3 years, other public agencies and private developers have also embraced the ABC Waters design that leads to improvement in water quality, enhanced biodiversity and new recreational space for people to get closer to water.

To build up the expertise of industry professionals in ABC Waters design features, the ABC Waters Professional Programme was launched in Sep 2011. Comprising four core modules and four elective modules, the programme covers the concept, design, implementation and maintenance of ABC Waters design features.

Participants who complete all four core modules plus any two elective modules, and meet the registration criteria of IES/SIA/SILA, would be eligible to be registered as an ABC Waters Professional. Details on the registration criteria can be found at the websites of IES, SIA and SILA. Participants who complete any single module would receive certificate of attendance for the module completed.

In line with the revisions to the Code of Practice on Surface Water Drainage, developers/owners shall engage an ABC Waters Professional to design, oversee the construction of, and develop a maintenance plan for the ABC Waters design features. The developer/owner shall submit the concept design and design calculations, endorsed by the ABC Waters Professional, to PUB as part of their Development Control (DC) submission.

On an annual basis, developers/owners shall also submit a certificate of inspection on ABC Waters design features, endorsed by an ABC Waters Professional, if applicable. The certificate of inspection shall include a declaration on whether the features have been inspected, and are maintained satisfactorily and functioning well.

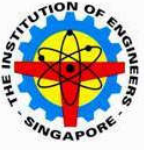


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Course Outline & Schedule

| Time | Content | Lecturers |
|---------------------------|--|-----------------------------------|
| 0900-0910 | ABC Waters Professional Programme - Overall Course Roadmap | IESA |
| 0910 – 1000 (50 mins) | <ul style="list-style-type: none"> • Overview and introduction to constructed wetlands • Ecological design of stormwater treatment wetlands in Singapore • Wetland monitoring and management: water quality, biodiversity, plant growth | Dr Michelle Sim |
| 1000 – 1015 (15 mins) | Tea break | |
| 1015 – 1215 (120 mins) | Engineering design of constructed wetlands: <ul style="list-style-type: none"> • Sizing • Determine Design Flows • Inlet zone, macrophyte zone and high flow by-pass design | Dr Edmund Low |
| 1215 – 1315 (60 mins) | LUNCH | |
| 1315 – 1445 (90 mins) | Case study <ul style="list-style-type: none"> • Wetland design and considerations • Construction process and considerations • Plant selection • Operation and maintenance | Mr Carsten M. Huttche (Biologist) |
| 1445 – 1530 (45 mins) | Assessment Quiz | |
| 1530 – 1745 (135 mins) | Site Visits <ul style="list-style-type: none"> • Sengkang Floating Wetlands • Lorong Halus Wetland | PUB Staff |

*There will be transport provided to external sites (one way)



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Speakers' Profile

Dr Michelle Sim

Pending for updates

Dr Edmund Low

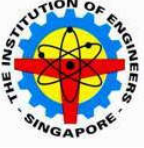
Dr Edmund Low is currently a Senior Lecturer at NUS College at the National University of Singapore. He has taught courses on environmental engineering, data science & health and safety. He has nearly 20 years of research and professional experience spanning the application of computational modelling and engineering principles to address issues in public health, air and water quality. He has provided advice for formulating control strategies against pollution sources, and has also carried out impact assessment studies of climate and urban land use changes on Singapore catchments. He received his PhD in Environmental Engineering from Yale University.

Carsten M. Huttche

Founder, Director and Principal Consultant
Enviro Pro Green Innovations

Carsten is an experienced environmental specialist with 25 years professional experience. He has been working in Singapore since 1994, and has been based here since. He currently works closely with Singapore's government agencies, providing specialist biodiversity and environmental design advice on applied Bio-Engineering solutions for ABC Watershed Projects. He has worked on a number of similar projects in South and South East Asia, China, Africa, Middle East, and the Pacific Region and has been responsible for leading, managing, and coordinating multi-disciplinary environmental, ecological and water resources projects.

Carsten held a Senior Adjunct Lecturer position at Singapore National University (NUS), School for Design and Environment, from 2008 – 2010. He conducted numerous teaching and speaking assignments. He has a Masters Degree in Biology (major Tropical Ecology) from the Freie Universität Berlin (FU Berlin), one of Germany's leading universities.



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Registration Form

| | | |
|---------------------------|---|---|
| Date of Course | : | 25 September 2023, Monday |
| Course Time | : | 9.00am to 5.45pm |
| Venue | : | IES Academy@Jurong East |
| Course Fee | : | \$378.00 (IES/SIA/SILA Members) / \$464.40 (Non Members) |
| CPD Programme | : | PDU (QECP/ABC), CPD (SILA/SIA-BOA) - To be confirmed |
| Course Coordinator | : | Nancie Neo IES Academy@Jurong East 80 Jurong East Street 21, #04-10 Devan Nair Institute (e2i), S(609607) Email: nancie.neo@iesnet.org.sg |
| Closing Date | : | 8 September 2023, Friday |

Participant's Details

| | | | | | | |
|------------------------|--------------------------|--------------------|--------------------------|------------------------|--------------------------|------------------------|
| Name | : | | NRIC/FIN No | : | | |
| Company | : | | Designation | : | | |
| Address | : | | | | | |
| | | | Postal Code | : | | |
| Mobile | : | | Office | : | | |
| | | | Fax | : | | |
| Email | : | | | | | |
| Please indicate | <input type="checkbox"/> | IES No: | <input type="checkbox"/> | SIA/SILA No: | <input type="checkbox"/> | Non Member |
| | <input type="checkbox"/> | PE/CEng No: | <input type="checkbox"/> | Company Sponsor | <input type="checkbox"/> | Vegetarian Meal |

Contact Person's Details (If different from participant)

| | | | | | |
|---------------|---|--|--------------------|---|--|
| Name | : | | Designation | : | |
| Mobile | : | | Office | : | |
| | | | Fax | : | |
| Email | : | | | | |

| | | | |
|------------------------|-------------------------|----------------|--|
| Payment Details | Cheque (if any): | Amount: | |
|------------------------|-------------------------|----------------|--|

*All course fees are inclusive of 8% GST, course materials and Halal refreshment.
*Certificate of Attendance will be issued to participants with 100% attendance.

Acceptance of Terms & Conditions for Registration of IES Academy's Courses/Events

I agree to abide by the Terms and Conditions for Registration of IES Academy's courses/events.

Name:

Signature:

Date:



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TERMS & CONDITIONS ON 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 IES Academy 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. Payment via **Bank Transfer, PayNow, AXS** available. 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:

Attn: Nancie Neo
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.

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.