

3-DAY SHORT COURSE ON *DESIGN OF MARITIME STRUCTURES*



OBJECTIVES

This course intended to introduce the general principles and considerations involved in the design of maritime structures especially the environmental and design loadings on the structures. The trainer will introduce the various types of jetty layouts, including breasting and mooring dolphins. In addition, design of the above structures will be taught in detail with actual examples. Fender design is one of the key factors in docking (or berthing) of the ship and forming an important loading to the jetties and dolphins. The function and terminology used in maritime structures will also be explained.

The course also includes the computation of wave forces on piles and seawalls, and design of breakwaters and groins.

A complete design calculation of as-built Maritime Facilities consists of a Jetty (Loading Platform), two Breasting Dolphins and a pair of Mooring Dolphins for berthing of different sizes of oil tankers will be included the course.

FOR WHOM

Engineers, Designers and Contractors.

Ref. No: Code

PROGRAMME DETAILS

Dates : 16, 23, 30 July 2014 (Wednesdays)

Duration : 3 Days

Time : 9.00am – 5.30pm

Venue : NTU@one-north Executive Centre,
11 Slim Barracks Rise (138664)

Fes : \$788.00 for IES & IStructE Members
\$838.00 for CIC Members
\$888.00 for Non- Members

CPD Programme: **21 PDUs - Confirmed**

- Inclusive of 7% GST, course materials and meals.
- Certificate of Attendance will be issued to participants with at least 75% attendance

COURSE OUTLINE

- **Introduction of Port and Maritime Structures**

- **Environmental and Design Forces on Maritime Structures**

Introduction to various types of maritime structures, function, terminology and environment. General design considerations: criteria, requirements, site selection and layout. Impacts of maritime structures on environment. Design forces on maritime structures : Wind, current, wave, docking force, mooring line force, earthquake (if applicable) in addition to the dead, superimposed and live loads.

- **A Typical Jetty Layout Plan**

- **Fender Design**

- **Breasting Dolphin Design**

Introduction of various types of maritime structures consist of jetty (loading platform), breasting and mooring dolphins. Selection and design of rubber fenders. Breasting Dolphin : Selection, functions, loadings and design.

- **Mooring Line Forces**

- **Mooring Dolphin Design**

Mooring line patterns for securing ships. Computation of mooring line forces. Mooring Dolphin : Selection, functions, loadings and design.

- **Forces on Jetty (Loading Platform)**

- **Jetty (Loading Platform) Design**

Jetty (loading platform) : General consideration, selection, functions, loadings and design.

- **Wave Forces on Piles, Seawalls and Breakwater Design**

Computation of wave forces on piles and seawalls. Breakwaters : Types, selection and design.

- **A complete design calculation of an as-built Maritime Facilities consists of a Jetty (Loading Platform), two Breasting Dolphins and a pair of Mooring Dolphins for berthing of different sizes of oil tankers.**

CV OF TRAINER

Er. Ang Chee Keong

Er. Ang. is a former Associate Professor in the School of Civil and Structural Engineering, Nanyang Technological University (NTU), Singapore for 16 years. He received his BSc from National Taiwan University and MSc from New York University 1970. Prior to joining NTU in 1983, he was working for several international reputable consulting firms in New York for 14 years. He is the Principle of Ang Chee Keong & Associates, a Civil, Structural and Marine Engineering Consulting Firm, founded in 1999.

Er. Ang is a Professional Engineer (Singapore and New York) and Accredited Checker in Singapore. He is a Fellow of the Institution of Engineers Singapore as well as the American Society of Civil Engineers.

During the past 30 years, Er. Ang had provided consultancy services to Statutory Boards, Consulting firms and construction companies. He also carried out Accredited Checker work for high-rise buildings, The Esplanade and Maritime Facilities.

Registration Form

3-Day Short Course On Design Of Maritime Structures

Date : 16, 23 and 30 July 2014 (Wednesdays)
Time : 9.00am – 5.30pm
CPD Programme : 21 PDUs - **Confirmed**
Venue : NTU@one-north Executive Centre 11 Slim Barracks Rise (138664)
Fees * : \$788: IES and IStructE Members / \$838: CIJC Members / \$888: Non- Members

** Inclusive of 7% GST, course materials and meals.*

** Certificate of Attendance will be issued to participants with at least 75% attendance*

Please register online/mail/fax the completed form **by 08 July 2014 Before 3pm** to:

Karen Phua
70 Bukit Tinggi Road,
Singapore 289758
(Tel) 6463 9211 (Fax) 6463 9468

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 No. : _____ Fax : _____

Email : _____
(For sending of confirmation email)

Please indicate : ☐ IES members IES M'ship No.: _____ P.E. No.: _____ (if applicable)
☐ Non-members ☐ Sponsored by company ☐ Vegetarian

Contact Person Details *(if different from participant)*

Name : _____ Designation: _____

Tel : _____ Fax: _____

Email : _____

Payment Details

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

* All Fees are inclusive of 7 % GST ** Cheque should be made payable to: "IES".

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 : _____

Ref. No: SW06-10-24

TERMS & CONDITIONS COURSE REGISTRATION

Registration

Registration can be done either online or by faxing in the registration form.

Any registration, whether on-line or fax will be on a **first-come-first-served basis** as the class size will be limited, and will only be confirmed upon receipt of full payment by The Institution of Engineers, Singapore (IES).

Email and phone registrations will not be accepted.

Closing Date & Payment

The closing date of the event will be 7 days prior to event commencement date. Cheques should be crossed 'A/C Payee only' and made payable to 'IES', with the **Date of event, Title of The Event and participants' name indicated clearly on the back of the cheque**, and post to:

**IES Academy
70 Bukit Tinggi Road
Singapore 289758**

Confirmation of Registration

Confirmation of registration will be given 7 days prior to the commencement date of event via email. If you do not receive the said confirmation email, you are required to contact IESA general admin immediately at 6463 9211 (office).

IESA reserves the right to allow only confirmed and paid registrants to attend the Event.

Withdrawals/Refunds of Fees

Notice of withdrawal must be given in writing to IESA. Policy on refund of course fee is as follows:

- **FULL** refund if we receive your written notice of withdrawal at least **7 days** before the commencement of the Event.
- **NO** refund otherwise.

No show of participant would not be accepted as reason for withdrawal/refund.

Replacement is allowed but restricted to once only. Replacement will be allowed only if written notice is received by us at least 3 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. 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.

Enquiries

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