

Supported by:



Title: Masterclass in Fundamentals of Metocean Engineering Course

Date/Time: Wednesday, 26th June 2019 / 09:00 hrs to 17:00 hrs

Venue: Mercure Singapore Bugis, 122 Middle Road, Singapore 188973

Across the offshore and marine industries Meteorological and Oceanographic (Metocean) phenomena directly impact asset integrity and operations. Therefore, a fundamental understanding of Metocean parameters and processes among the users of Metocean information is of vital importance to ensure the safe and economic design and operation of marine structures and facilities.

Synopsis & Course Programme

This one-day course is aimed at those who need a deeper understanding of Metocean Operational and Design criteria, which characterise frequently occurring and rare extreme events that are typically defined using return period probabilities of occurrence; i.e. 100-Year Storm. The course format is a mixture of interactive lectures, exercises and open Q&A. Participants will receive electronic copies of all the course material.

The course programme comprises of four parts.

1. Following a brief introduction, Part 1 of the 1-day course begins with a high-level overview of the governing physical atmospheric and oceanographic processes that drive winds, waves and currents on the Earth's surface.
2. Part 2 of the course then focuses on the key parameters used to characterise these processes and how these parameters are measured or modelled numerically. The morning session concludes by explaining how acquired Metocean data is used for operational decision making and processed into Operational Statistics.
3. Part 3, explains how Metocean Design Criteria are derived using the Extreme Value Analysis technique. The theoretical basis and essential derivation steps are outlined along with best practices. Participants will consolidate what they've learned through a supervised exercise to derive an extreme 100-year return period significant wave height, H_{s100} . The session then concludes with deeper insights into the design exposure of marine structures or vessels to extreme events; how seasonality and directionality are accounted for and lastly touches upon some advanced analysis techniques.
4. Part 4 leads on from Part 3 by taking a closer look at the mechanics of waves and which theories are commonly used estimate the kinematics associated to design individual wave elevations, such as C_{max} or H_{max} . Participants will be familiarized Small Amplitude Wave Theory (linear), Stokes Waves as well as theories describing Wave-Wave Interactions. For each, the key assumptions, boundary conditions and derivation methods will be explained in an easy to digest manner. The course concludes with an open Q&A session.

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Speaker's biography: Dr. Riz Sheikh PhD DIC MEng ACGI CEng CMarEng MIMarEST
Metocean Specialist, Metocean Hub Ltd.



Dr Rizwan Sheikh (Riz) is a Metocean Specialist with close to 20 years “hands-on” experience. He received a First-Class Master of Engineering Degree from Imperial College in 1996, for which he was awarded the Sir Bruce White Prize for outstanding achievement in Fluid Mechanics. He subsequently went on to complete a doctoral thesis in Applied Hydrodynamics in 2004 under the supervision of Professor Christopher Swan of Imperial College London. More recently in 2016 Riz successfully completed the University of Stanford course on Machine Learning.

Over the course of Riz's career he's supported numerous major Oil & Gas projects when serving as a Technical Authority in Shell and Petronas Carigali. He's provided a full range of consultancy services and conducted R&D for BMT, DNV-GL (formerly Nobel Denton) and Fugro as well as published several conference and journal publications. In May 2017 Riz incorporated Metocean Hub Limited through which he supports the installation of the East Anglia ONE OWF as well as providing consultancy services to a wide range of organisations as well as serving as Expert Witness for Metocean related matters. Riz is currently the Course Lead for the IMarEST Metocean Awareness Course and regularly delivers customized industry courses on Metocean Engineering & Data Science to clients in the offshore sector.

Registration Form

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Delegate Information

Company Name: _____

Contact Name: _____ Job Title: _____

Company Address: _____

Tel: _____ Email: _____

Registration Options

IMarEST Member rate **S\$ 680**

IMarEST Non-Member rate **S\$ 760**

Payment Method

Please invoice Cheque Bank transfer

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For full details on terms and conditions including cancellation policy please visit:
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Delegates will receive one year's complimentary affiliate IMarEST membership.

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