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METOCEAN AWARENESS COURSE

*An essential course providing a greater understanding of metocean
and its implications for offshore design and operations*

**Tuesday 10 – Thursday 12
May 2011**

Hotel Istana
73 Jalan Raja Chulan, 50200,
Kuala Lumpur, Malaysia

Course highlights

- ▶ **Learn** why meteorology and oceanography (metocean) is important to the offshore oil & gas and marine renewables industries
- ▶ **Ability to engage** internal and external stakeholders about metocean matters
- ▶ **Explore** how the regional metocean conditions around the world impact operations and engineering design
- ▶ **Examine** how metocean statistics are presented and how they are used
- ▶ **Understand** how weather and ocean forecasts are derived
- ▶ **Identify** the process for obtaining key metocean deliverables
- ▶ **Find out** where metocean information and advice can be obtained



This course
is eligible
for **CPD**



**Comments from delegates
who attended previous courses:**

**“ The general enthusiasm of the speakers
about the subject shone through and the
course felt new and exciting ”**

**“ Gained a good knowledge of metocean
in such a short time ”**

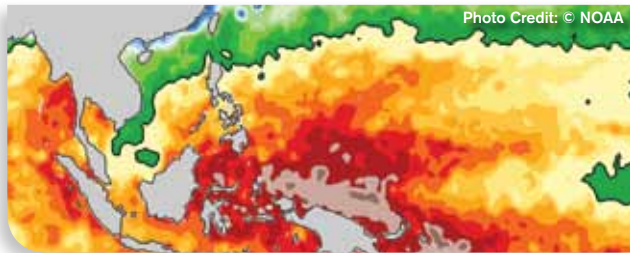
FURTHER INFORMATION:
www.imarest.org/events
Email: **jenny.seow@imarest.org**
or telephone: **+65 6472 0096**
or **+65 9828 4561**

WHY WILL THIS COURSE BENEFIT YOU?

For all offshore industries, the effects of meteorology and oceanography (metocean) have a major impact on design and operations. If users of metocean information are not aware of the implications that the weather, waves, currents and water levels can have on their operations or design work, then things can go wrong with serious health and safety and economic consequences.

The **Metocean Awareness Course** is aimed at those who need to have a greater understanding of metocean conditions worldwide and how they might impact the effectiveness of their work.

The course format will include a mixture of short presentations presented by expert speakers in this field (see back page) and **interactive workshop sessions** including a **group case study exercise**. Delegates will receive a comprehensive course manual on attendance.



WHO SHOULD ATTEND?

This course is essential for Project Managers and Engineers in the offshore and renewables industries, involved in operations or design, from new entrants to the industry to those with many years experience. The course will enable delegates to interact with expert speakers and other delegates from various backgrounds who use or provide metocean data.

EXPANDED LEARNING OUTCOMES FOR INDIVIDUAL PARTS

PART I: Oil and Gas industry requirements for metocean criteria and statistics – the application

After completion of the course, participants will:

- ▶ have an understanding of how and why metocean is important to the offshore oil and gas and marine renewables industries for safe and economic operations, through each phase of field development/operation from initial acreage acquisition to field abandonment;
- ▶ be able to engage internal and external stakeholders about metocean matters and their impact.

COURSE SCHEDULE

DAY 1

- 08.30** Registration and refreshments, welcome
- 08.45** Introductions and objectives of the course
Offshore industry requirements for metocean criteria & statistics – the application
- 09.30**
 - ▶ Why metocean is important
 - ▶ What exactly is metocean?
 - ▶ War stories from participants & speakers
- 10.15** Refreshments
- 10.30** War stories from participants & speakers (contd)
Offshore engineering applications:
 - ▶ Requirements for metocean information at each stage of the project cycle
 - ▶ How metocean meets those needs
- 11.45** Kick-off: group case study exercise
- 12.30** Lunch
Metocean data acquisition
- 13.30** Metocean data sources:
 - ▶ Field measurements - proprietary, national & global
 - ▶ Satellite data
- 15.15** Refreshments
- 15.30**
 - ▶ Data QC
 - ▶ National databases/data archiving
- 16.00** **Numerical modelling**
 - ▶ Wind & waves
 - ▶ Water level & currents
- 16.45** **Data trends/climate variability**
- 17.30** Finish
- 18.00** Drinks reception

PART II: Metocean data sources, data quality control, archiving and climate variability

After completion of the course, participants will:

- ▶ be able to describe the various methods of acquiring metocean data, the issues involved, the indicative costs and trends for the future;
- ▶ be aware of safety guidelines (OGP) and the inherent risks of in-field data collection;
- ▶ be aware of vessel requirements to undertake instrument deployment;
- ▶ have an understanding of data processing, quality control and data archiving;
- ▶ know from where they can obtain more relevant information and advice;
- ▶ be able to describe the process of numerical modelling of winds, waves and currents; the limitations and accuracy of results.

DAY 2

08.30 Refreshments

Metocean parameters & processes

08.45 Metocean parameters:

- ▶ Atmospheric circulation
- ▶ Winds & waves

10.15 Refreshments

10.30 Metocean parameters (continued):

- ▶ Ocean circulation
- ▶ Currents, water level (tides, surges, tsunami) and ice

12.00 Group case study exercise (contd)

12.30 Lunch

Metocean conditions around the world

13.30 Metocean conditions worldwide from an offshore industry perspective:

- ▶ Tropical climates - GOM, Australia & West Africa
- ▶ Tropical - South China Sea
- ▶ Temperate & Arctic: North Sea & Caspian/Arctic

15.00 Refreshments

Weather forecasting

15.15 Weather forecasting:

- ▶ How weather forecasts are generated
- ▶ Presentation of forecasts
- ▶ Forecast exercise

16.45 Group case study exercise (contd)

17.30 Close

18.00 Course dinner

DAY 3

08.30 Refreshments

Developing metocean operational statistics

08.45 Metocean statistics for operational planning:

- ▶ Scenarios – when to use, what to ask for
- ▶ Operability – weather windows: seismic, drilling, pipelaying, installations, heavy lifts, tows, float-overs, decommissioning, etc
- ▶ Aviation and marine logistics: helicopters, marine crew change, etc
- ▶ Operational statistics exercise

10.30 Refreshments

Developing metocean design criteria

10.45 Metocean criteria for design:

- ▶ Key elements of design ISO 19901-1
- ▶ Developing metocean criteria for range of engineering applications; response-based design
- ▶ Uncertainties
- ▶ Extreme value analysis exercise

12.30 Lunch

Group case study exercise

13.30 Finalise group case study exercise
Group presentations

15.45 Refreshments

Wrap-up/feedback

16.00 Wrap-up/feedback discussion:

- ▶ Future developments
- ▶ What we have learnt
- ▶ What are we going to do differently?

Feedback questionnaire

17.00 Close

PART III: Metocean parameters and processes and metocean conditions around the world

After completion of the course, participants will:

- ▶ have a broad understanding of the key meteorological and oceanographic parameters impacting offshore design and operations;
- ▶ be able to describe the metocean conditions in the various regions around the world where the offshore oil and gas industry and marine renewables industry operates;
- ▶ know from where they can obtain more metocean information and advice.

PART IV: Weather forecasting

After completion of the course, participants will:

- ▶ have an understanding of how weather and ocean forecasts are derived, their accuracy and how they are presented;
- ▶ know from where they can obtain more relevant information and advice.

PART V: Operational statistics and design criteria

After completion of the course, participants will:

- ▶ know how metocean conditions are presented statistically and are used for design in various scenarios;
- ▶ be able to specify the process for undertaking design criteria studies and for preparing operational planning statistics reports;
- ▶ know from where they can obtain more relevant information and advice.

MEET YOUR SPEAKERS

Mohamed Nasir B Abdullah is the Senior Metocean Engineer for Petronas Carigalli. He has spent most of his 20 years work experience specializing in metocean real-time system design, deployment and commissioning. He was involved in hydrographic system operation and design in the early part of his career. He is now actively engaged with the committee of Malaysian underwater robotic research group. Nasir received his degree in Electrical Engineering from the University of Missouri Kansas City in 1989.

Rob Cowle started his career in Marine Weather Forecasting after graduating in Meteorology in Rhodesia in 1977. After learning "the trade" working offshore in one of the world's most harsh offshore environments, the northern North Sea, he moved on to Italy, the Middle East, Australia and now Singapore. During those 30 years he spent 6 years in Perth working in IT and software development and worked on many Woodside projects including the project management of ROWS and assisted in the development of environmental monitoring systems such as REMS and SEMS. Before joining Fugro GEOS in Singapore in 2004, Rob was the Managing Director of WNI Weathernews, Australia where he established the first commercial weather services for Television and the Internet.

Ambun Dindang is a Meteorological Officer working at the Malaysian Meteorological Department (MMD) since 1994. He obtained his bachelor degree (Hon) in Physics from National University of Malaysia in 1992. This was followed by a one year Advanced Course in Meteorology at India Meteorological Department (IMD), Pune, India. Beside his 15 years experiences in weather and aviation forecasting, he has also been involved in designing the marine weather forecasts for oil and gas operation in Malaysia.

Dr Kevin Ewans is a Principal Metocean Engineer at Sarawak Shell Berhad. He has a PhD from Auckland University and has some 30 years experience in the offshore industry. He is internationally recognised as a metocean expert, particularly in ocean waves and their application to offshore engineering, and extreme value analysis for setting metocean design criteria.

Dr Chris Graham is a Metocean Consultant recently retired from Shell. He has nearly 40 years experience in the offshore business and has worked in various metocean capacities around the world from the Arctic to the Tropics. His experience ranges from towing icebergs, to developing metocean data collection systems, and deriving metocean criteria. Most recently he has developed and presented online and face-to-face metocean courses. Chris is both a Chartered Engineer and a Chartered Scientist.

Lim Ze Hui is a meteorologist at Malaysian Meteorological Department (MMD) and has served for 23 years as operational weather forecaster. He obtained his first degree course in Mathematics from the National University of Malaysia in 1987 and diploma in meteorology from the Bureau of Meteorology, Australia in 1991. He has worked mainly in weather forecasting and monitoring both over the land and sea. Presently, his work focuses on public and specialized weather forecasts. Prior to this, he worked on the operational aspects of rainfall enhancement.

Vagner Jacobsen has been with DHI Water & Environment for almost three decades and has been involved in metocean studies for the North Sea, Caspian Sea, Okhotsk Sea, Persian Gulf and South China Sea. The activities cover monitoring and measurements, analyses and numerical modelling (hindcast/forecast) of metocean parameters. Vagner has supervised numerous projects combining monitoring and modelling both for the oil & gas industry and for the offshore renewable energy sector. Currently he is managing director for DHI Water & Environment (M) Sdn Bhd.

Michael Quinnell has a BSc in Ocean Sciences from University of Bangor, UK, and a post-graduate certificate in Coastal Engineering from Old Dominion University, USA. Mr Quinnell has over 12 years experience working at Fugro GEOS in the provision of commercial metocean measurement services and monitoring systems, primarily in support of the oil and gas industry. Prior to this he worked in marine geophysics and coastal geomorphology. With over 14 years experience in marine services, Mr Quinnell serves as Fugro GEOS' regional manager in South East Asia.

Dr Rizwan Sheikh is a Metocean specialist with nearly 10 years experience. He is currently employed by Shell in KL. Previously, he worked with Fugro GEOS and Noble Denton, as well as completing a doctoral thesis in Applied Hydrodynamics. His experience encompasses deriving metocean conditions for design and operability at numerous locations worldwide, and he regularly contributes research to industry through conference and journal publications. 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.



APPLICATION FORM – Metocean Awareness Course

**Tuesday 10 - Thursday 12 May 2011,
Kuala Lumpur, Malaysia**

Instructions: Please print clearly or attach business card and photocopy this form for further delegates.

PERSONAL INFORMATION

IMarEST/SUT Membership Number (if known) _____

Full name _____

Job title _____

Organisation/company _____

Address _____

City _____

State _____

Code _____

Telephone _____

Email _____

Signature _____

Metocean Awareness Course rates:

- IMarEST/SUT Member rate SGD 2,100
- Non-member rate SGD 2,310

Total amount payable SGD _____

Registration fees include: extensive course materials, daily refreshments over the 3 days, one evening drinks reception, one course dinner and complimentary car park coupons over the 3 days.

For full details on terms and conditions including cancellation policy, venue and accommodation visit: www.imarest.org/events

PAYMENT INFORMATION:

- Please invoice
- VAT receipt
- Cheque/Eurocheque
- Bank transfer

Payable to

"Institute of Marine Engineering Science and Technology"

Bank Account: 101-356-213-5; Swift Code: UOVBSGSG;

Bank Code: 7375; Branch Code: 001;

Bank's Address: UOB Main Branch, 80 Raffles Place UOB Plaza 1, Singapore 048624

Please email Jenny Seow if you wish to pay by credit card.

ADDITIONAL REQUIREMENTS:

- Vegetarian/special dietary meals
- Access requirements

(please specify) _____

You will receive a confirmation email, an invoice or VAT receipt and further information on receipt of your application form. Please contact us if you do not receive confirmation.

**EMAIL THE COMPLETED FORM TO:
jenny.seow@imarest.org**

**or send by post to: IMarEST South East Asia Division
(SEAD) office, 352 Tanglin Road #01-09, Strathmore Block,
Tanglin International Centre, Singapore 247671**