

METOCEAN AWARENESS COURSE

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

**Tuesday 31 May –
Thursday 2 June 2011**

**Ardoe House Hotel,
Aberdeen, AB12 5YP**

**Tuesday 6 – Thursday 8
September 2011**

**IMarEST HQ,
London**

Course highlights

- ▶ **Learn** why meteorology and oceanography (metocean) is important to the offshore oil and 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 ”**

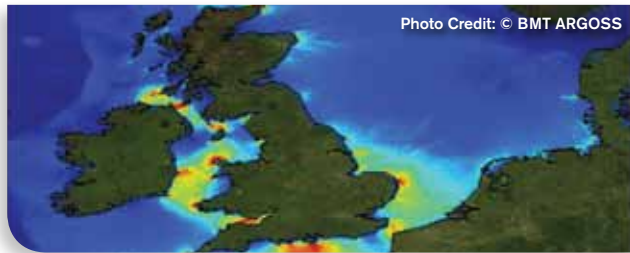
FURTHER INFORMATION:
www.imarest.org/events
Email: **events@imarest.org**
or telephone: **+44 (0)20 7382 2600**

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 *Chris Graham*

08.45 Introductions and objectives of the course

Offshore industry requirements for metocean criteria and statistics – the application *Chris Graham*

- 09.30** ▶ Why metocean is important
- ▶ What exactly is metocean?
- ▶ War stories from participants and speakers

10.15 Refreshments

10.30 War stories from participants and 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 *Ralph Rayner*

13.30 Metocean data sources:

- ▶ Measured
- ▶ Modelled

15.15 Refreshments

15.30 Metocean data sources (contd)

- ▶ Satellite
- ▶ Data QC/archiving

16.30 **Data trends/climate variability** *Ian Leggett*

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 and processes

Robin Stephens

08.45 Metocean parameters:

- ▶ Atmospheric and ocean circulation
- ▶ Winds and waves

10.15 Refreshments

10.30 Metocean parameters (contd):

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

12.00 Group case study exercise (contd)

12.30 Lunch

Metocean conditions around the world

Colin Grant

13.30 Metocean conditions worldwide from an offshore industry perspective:

- ▶ Temperate climates (North Sea)
- ▶ Tropical climates (GOM/South East Asia/West Africa)
- ▶ Arctic type climates (eg Sakhalin, North Caspian)

15.00 Refreshments

Weather forecasting *Trevor Pitt*

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 *Mark Calverley*

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

Ian Leggett

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 *Chris Graham*

13.30 Finalise group case study exercise
Group presentations

15.45 Refreshments

Wrap-up/feedback *Chris Graham*

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

Dr Mark Calverley has worked in a Metocean service company, mainly supporting the oil and gas industry, for the past 20 years. His experience includes offshore data collection, data analysis and criteria development. This has involved work in many frontier regions as well as mature basins. The range of projects supported extends from preliminary licensing support through to structural integrity and decommissioning. He has been involved in the development of metocean strategy processes for a number of major oil companies.

Dr Chris Graham is a Metocean Engineering 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 bespoke metocean courses. Chris is both a Chartered Engineer and a Chartered Scientist.

Dr Colin Grant has worked as a Metocean Specialist for over 30 years and is currently the technical authority for metocean in BP. He currently chairs the metocean committee of the International Association of Oil and Gas Producers (OGP). He is a Chartered Scientist, Chartered Marine Scientist and currently a Vice President of the IMarEST.

Ian Leggett is a Metocean Consultant recently retired from Shell after 30 years with the company managing data collection programmes, weather forecast services and the development of operational statistics and design criteria. He now runs his own Metocean company offering independent advice, expertise and training to the oil and gas and marine renewables sectors. Ian is a Chartered Scientist, a Chartered Marine Scientist and a Chartered Marine Technologist.

Trevor Pitt has worked as a Metocean Specialist for 25 years and is currently the manager of Fugro GEOS weather services in the UK. Formerly with the Royal Navy as a Metoc Officer, Trevor sailed around the world on the Navy's Survey vessels and undertook both aviation and oceanographic forecasting roles. On retirement from the Navy, he took over as General Manager with Noble Denton Weather Services in 1997. The last move was to Fugro GEOS in 2002. With offshore forecasting experience in most of the ocean basins and in a variety of roles he continues to lead the provision of a quality service to a wide range of customers.

Professor Ralph Rayner has worked in metocean data collection and modelling for over 30 years. He is currently sector director for energy and environment for the BMT Group as well as having an advisory role to the US Integrated Ocean Observing System initiative. He serves as chair of the Global Ocean Observing System Scientific Steering Committee, is a Vice President of the Institute of Marine Engineering, Science and Technology and is a member of the Council of the Society for Underwater Technology.

Robin Stephens holds the position of Senior Advisor in Oceanography and Meteorology at BMT ARGOSS. Robin has 30 years of experience in applied physical oceanography, meteorology and maritime civil engineering. Most of his career to date has been spent in the application of the science of physical oceanography to the solution of practical engineering design problems and maritime operational planning issues. He has spent periods of employment in conventional maritime civil engineering, maritime engineering research and development, commercial applied physical oceanography and the commercial application of applied ocean modelling and remote sensing. His experience has been predominantly in the commercial sector, working on projects in many countries throughout the world, across a diverse range of client sectors, including the oil and gas industry, the construction industry and government. Robin's experience has included senior level technical, commercial and managerial responsibilities. Robin is a Chartered Marine Scientist and Chartered Civil Engineer.

APPLICATION FORM – Metocean Awareness Course

Tuesday 31 May - Thursday 2 June 2011

Ardoe House Hotel, Aberdeen, AB12 5YP

Tuesday 6 - Thursday 8 September 2011 IMarEST HQ

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

PERSONAL INFORMATION

IMarEST/SUT Membership Number _____

Full name _____

Job title _____

Organisation/company _____

Address _____

City _____

County _____

Postcode _____

Telephone _____

Email _____

Signature _____

Metocean Awareness Course rates: (please tick)

Aberdeen Course London Course

Course fees: Member £1900 Non-member £2300

Rates include VAT at standard rate

Early bird discount £200

(Registrations received before Friday 13 May 2011) Aberdeen

(Registrations received before Friday 19 August 2011) London

Total amount payable £ _____

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

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 IMarEST

Barclays Bank, 54 Lombard Street, London EC3P 3AH, UK.

Bank sort code: 207767. Account number: 70517291.

Ref: MACUK + delegate surname.

Credit card (please fill in details below)

The total fee due will be debited in full on receipt of your registration form.

Access Amex Diners Card Eurocard

Mastercard Solo Debit Card Visa

Card number

Card holder's name _____

Signature _____

Expiry date _____

Start date _____

Issue number (if applicable) _____

Security Code (last 3 digits on the back of your card)

Address at which card is registered _____

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:
events@imarest.org

OR FAX TO: +44 (0)20 7382 2667

**or send by post to: Events Department, IMarEST, 80 Coleman Street,
London EC2R 5BJ, UK**