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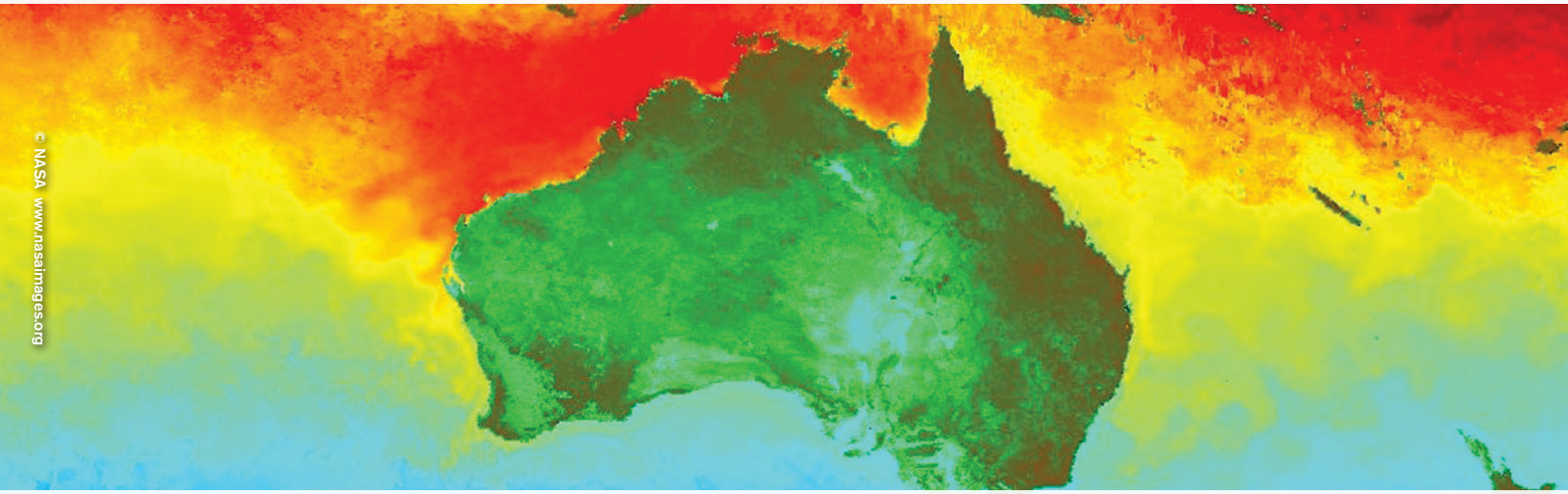


Metocean
Awareness Course

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

Wednesday 3 – Friday 5 August 2016

Cliftons – Parmelia House (Level 4), 191 St Georges Tce, Perth

Metocean is a discipline covering meteorology and physical oceanography, and is concerned with quantifying the impact and effect of weather and sea conditions on a wide range of activities in the offshore oil & gas and renewables.

This is an essential course providing a greater understanding of Metocean and how the application of Metocean information can benefit your organisation particularly with respect to:

- Improved safety
- Better decision-making and planning
- Reduced costs

Comments from delegates who attended previous courses:

"The presenters were excellent in sharing their experience and input to issues faced by participants in their work"

"Gained a good knowledge of metocean in such a short time"

CPD APPROVED BY
Institute of Marine Engineering, Science & Technology
IMAREST

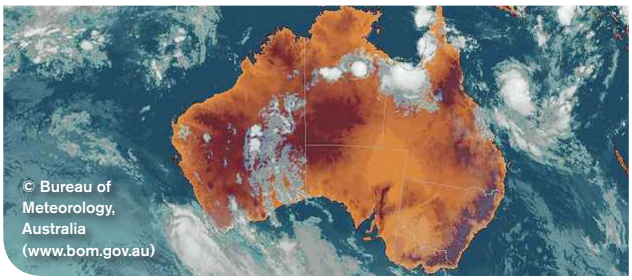
For further details contact:
Jennifer Maninin
Tel: + 61 (0) 8 9481 0999
Email: j.maninin@sut.org

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.

COURSE SCHEDULE

DAY 1

10.30 Registration & Refreshments

11.00 Welcome, HSE briefing, housekeeping, ground rules

11.15 Introductions and icebreaker

11.30 **Course objectives and background**

11.45 Metocean experiences from delegates and speakers

12.00 Kolskaya and Key Biscayne Jackup Disasters, and Why it is Always Easier to Blame Metocean

12.30 Lunch

13.30 **Introduction to Metocean**
- Setting the scene

14.00 **Metocean parameters and processes**

14.00 Atmospheric and ocean circulation

14.45 Wind, waves, currents, water levels

15.30 Refreshments

15.45 **Metocean Data Acquisition and Quality Control**

15.45 Measurements, quality control of data and archiving

16.30 Numerical modelling

17.15 **Learning Exercise – Metocean Quiz Day 1**

17.45 Finish

18.00 Drinks reception

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.

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;
- 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

09.00 **Metocean Operating Statistics**
- Developing metocean statistics for operational planning e.g. weather windows

10.00 Exercise

10.15 Refreshments

10.30 Metocean operational statistics continued

10.45 **Metocean Design Criteria**
- Developing 100-year extremes
- Extreme value analysis (EVA)
- Joint probability
- Uncertainty

12.30 Exercise

12.45 Lunch

13.45 **Weather Forecasting**
- How are forecasts produced?
- Forecast Products
- Uncertainty
- Exercise

15.15 Refreshments

15.30 **Data Trends and Climate Variability**
- What are the issues for metocean?
- Climate variability and climate change

16.30 **Learning Exercise – Metocean Quiz Day 2**

17.30 Finish

18.00 Course Dinner

DAY 3

08.30 Refreshments

09.00 **Metocean Conditions Around the World**
- Tropical cyclone regions – Australia, Gulf of Mexico
- Tropical – West Africa, South China Sea
- Temperate – North Sea, Atlantic Margin

10.15 Refreshments

10.30 Cold regions – Caspian Sea, Sakhalin, Arctic

11.15 **Course Conclusion**
- Quiz results
- Course Review
- What have you learned, what will you do differently?
- Feedback, course certificate
- Developments, challenges
- Future training

12.30 Lunch

13.30 **Extension – Metocean effects on pipelines**
- Geotechnics and Metocean – the seabed interface and its effects on subsea infrastructure

15.00 Finish & Refreshments

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

Steve Buchan is General Manager of RPS MetOcean, a physical oceanographic consultancy founded in Perth in 1974. He joined in January 1979, and has been involved in the development of operational and/or design metocean criteria for every operational Offshore Oil & Gas facility (and related coastal facilities) on the NW Shelf and in the Timor Sea. He is a Member of The Institution of Engineers Australia and of the Society for Underwater Technology. He has over 30 years of experience in Physical Oceanography, Coastal and Ocean Engineering.

Murray Burling is General Manager and a Principal Coastal Engineer of RPS APASA. He has extensive experience as a consulting coastal engineer and marine modeller. He has been modelling lake, estuarine, coastal and ocean dynamics for more than 20 years, and has applied leading commercial (e.g. Mike3/21), open source (Delft3d, SWAN, EFDC) and RPS ASA (DREDGEMAP, OILMAP, SIMAP, CHEMMAP) hydrodynamic, wave and fates models for many projects around the world.

Dr Gregorgy Bush is General Manager at RPS Metocean and has over 20 years of experience in commercial oceanography for the offshore oil and gas industry. Early work experience focused on field work offshore, through to project management then company management. His highest level of education was a doctorate in physics using acoustics to measure sea ice thickness in Antarctica. Areas of special interest include mooring design and oceanographic survey, particularly current measurements. He has worked around the world including 3 years based in the UK, and 9 years based in Singapore. He is currently the general manager for RPS MetOcean in Perth.

Glenn Cook is Senior Climate Liaison Officer at the Bureau of Meteorology and has been a meteorologist with the Bureau of Meteorology for almost 25 years. After graduating with a Physics Degree from the University of Melbourne in 1989, Glenn was recruited by the Bureau and completed a Graduate Diploma of Meteorology in 1990. He was posted to Perth in late 1990 and worked in the WA Regional Forecasting Centre as an operational meteorologist until 2000. However, between 1992 and 1994, Glenn was seconded to the RAAF special reserve to take on the position of Officer-in-Charge of the Meteorological Office at RAAF Base Tindal, in the Top End of the NT, providing weather forecasting services to the F/A 18 fighter squadron. In 2000, Glenn commenced work in the WA Climate Services Centre of the Bureau of Meteorology as a consulting meteorologist, and since 2006 has been the WA Regional Climate Services Manager. The Centre's role is to provide climate data and monitoring services for WA, as well as communicate information about past climate, climate forecasting, and climate change.

Scott Draper has been is a Senior Lecturer at UWA jointly within the School of Civil, Environmental and Mining Engineering and the Centre for Offshore Foundation Systems. He completed a DPhil (PhD) in Engineering Science at the University of Oxford, UK, in 2011 on fluid mechanical aspects of marine renewable energy. Since commencing at UWA in 2011 Scott has worked as part of a multidisplinary team on problems in offshore engineering, including scour and sediment transport with application to stability design of subsea pipelines. Scott has authored around 40 publications.

Jan Flynn is a senior metocean engineer with Shell Development Australia Pty Ltd. She graduated from Southampton University with an MSc in Oceanography in 1987 since when she has worked in applied oceanography, primarily for the oil and gas, and water industries. She has undertaken studies in a wide variety of ocean environments in Europe, Middle East, Africa and SE Asia, including extensive field measurements, data analysis and interpretation. She is presently supporting the development of the world's first Floating LNG processing plant, to be installed off the coast of Western Australia.

Scott Noreika is the Consultancy Manager and a Senior Oceanographer at RPS MetOcean Pty Ltd (RPS), a physical meteorological and oceanographic consultancy firm in Perth (since 1974) and he's been with the company since 1991. He graduated from the United States Naval Academy with a BSc in Physical Oceanography/Naval Science in 1984. He then spent 6 years as a US Naval Officer working at sea (Pacific and Indian Oceans) and onshore (Hawaii) in roles including management of personnel and operating systems and in provision of metocean services/support to the Pacific Fleet. He moved to Western Australia in 1991, where he took up his position with RPS. In his 21 years at RPS, he has been involved in the development of operational and/or design metocean criteria for most of the operational Offshore Oil & Gas developments (and related coastal facilities) on the NW Shelf and in the Timor Sea. He also has extensive experience in conducting metocean studies for global offshore sites in the Southern Ocean, in the South China Sea, in the Indonesian Seas, off East and West Africa, off Brazil, and in the South and North Western Pacific Ocean.

Professor David White is the Shell EMI Professor of Offshore Engineering at the University of Western Australia in Perth. He has been at UWA since 2006, having previously held a lectureship at Cambridge University in the UK. His research encompasses many aspects of offshore geotechnics and fluid-soil-structure interaction. The work combines physical modelling, particularly using the UWA centrifuge and O-tube facilities, with numerical analysis and field observations. David has authored book chapters on piled foundations and pipeline geotechnics, and his >180 career publications have won 5 prizes. He was awarded the 2010 Anton Hales Medal by the Australian Academy of Science and the 2011 Western Australia Tall Poppy Science Award. He was the 2011 Western Australian Early Career Scientist of the Year.

Application Form – Metocean Awareness Course

Wednesday 3 – Friday 5 August 2016

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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 fees: (please tick)

Member $1850 AUD ☐ Non-member $2000 AUD

☐ Early bird discount $200 AUD ☐ *(Registrations received before Tuesday 31st May 2016)*

Rates include GST at standard rate

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**

Delegates will receive one year's complimentary affiliate IMarEST membership

☐ Please tick here if you are happy for us to distribute your details to join the Metocean Awareness Course Nexus Group

PAYMENT INFORMATION:

☐ Please invoice (PO NO.)

☐ GST receipt

☐ Credit card Mastercard, Visa or AMEX* ONLY. We cannot accept payment by any other card.

** Payment by Visa or MasterCard will carry a 1.5% surcharge / Payment by AMEX will carry a 2.75% surcharge.*

☐ Amex ☐ Mastercard ☐ 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 GST receipt and further information on receipt of your application form. Please contact us if you do not receive confirmation.

Registration Information

For further information, please contact Jennifer Maninin at **j.maninin@sut.org** or **+61 (0) 8 9481 0999**

To simply register please email your completed registration form to **perthevents@sut.org** or post to: 11/17 Prowse Street, West Perth, WA, 6005.