

ABOUT THE COURSE

The course will aim to teach structural modelling of fixed platforms, which includes calculation of hydrodynamic loading through Morison's equation. The modelling of the fixed platforms as a 3D structural models, using beam elements will be taught. The response of the structure will be checked using codified rules in order to check the compliance of the structure.

Strength checks for yielding and buckling are dealt with.

WHO SHOULD ATTEND

Engineers and scientists involved in the design of offshore structures. Personnel from oil companies, classification societies and offshore structure builders will benefit from attending this course. The course is innovative in both content & structure with a careful balance of theory & practice.

COST

The registration fee of the workshop will be £695 plus VAT (UK only) which includes course notes. Course notes will be sent in advance.

PAYMENT

Payments can be made by cheque (made payable to ASRANet Ltd.), cash or bank transfer. Please enquire for details.

CONTACT

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ONLINE Analysis and Design of Offshore Structures including Dynamic response

10-11 June 2024



(A Maritime Company for Courses, Conferences
and Research)

PROGRAMME

All timings in BST (GMT+1)

Monday 10TH June 2024

09.00-10.30 Lecture 1: Overview of advances in offshore structure design.
Mr Trevor Hodgson

10.30-11.00 *Break*

11.00-12.30 Lecture 2: Structural modelling of fixed platforms – I.
Mr Trevor Hodgson

12.30-13.30 Lunch

13.30-15.00 Lecture 3: Structural modelling of fixed platforms – II.
Mr Trevor Hodgson

15.00 – 15.30 *Break*

15.30-17.00 Lecture 4: Regular wave theories and particle kinematics
Prof Nigel Barltrop

Tuesday 11th June 2024

09.00 – 10.30 Lecture 5: Wave spectra, New wave, Short and long term statistics
Prof Nigel Barltrop

10.30 – 11.00 *Break*

11.00-12.30 Lecture 6: Wave and Current loads- Morrison and Vortex shedding.
Prof Nigel Barltrop

12.30-13.30 Lunch

13.30 - 15.00 Lecture 7: Spectral Analysis
Prof Nigel Barltrop

15.00 - 15.30 *Break*

15:30 - 17:00 Lecture 8: Strength; Yielding, Buckling and Fatigue

LECTURER CV'S

Prof Nigel Barltrop

Professor Barltrop is an emeritus professor at the university of Strathclyde, UK and the director of Barltrop Engineering LLP which was established in 2015 and provides consultancy and expert witness services in the areas of fatigue and strength of offshore structures, ships, lattice towers and renewable energy devices. His career activities in different stages are as follows:

2015 - 2017: Expert witness on litigation related to jack up production platforms and an offshore met mast. Dynamic fatigue analysis of a flare tower and front-end design of a fish farm. Part time professor at University of Strathclyde.

1995 - 2015: Professor at Glasgow and then Strathclyde Universities. (Head of Department 1995 - 2001). Research work includes Deepwater breaking wave forces and structural reliability of degrading offshore structures. Published Floating structures: a guide for design and analysis, MTD/OPL. Expert witness for loss of MV Prestige.

1977 - 1995: Atkins, Head of Marine & Structural Technology department 1984, Technical Director 1988. Projects include design of Leman G platform, Hutton TLP Column-Pontoon connections, Structural assessment and strengthening of the semi-submersibles Buchan Alpha and Iolair, the Seacat 'Great Britain' catamaran and several tankers, investigation of damage to WEG MS3 wind turbines. Developed

software for analysis of stiffened plating, concrete offshore structures, coupled tether-hull TLP dynamics and response of lattice towers and turbines to wind turbulence. Expert witness in relation to losses of Alexander Kielland, Silimna and Kirki. Published Dynamics of fixed offshore structures (MTD/Butterworth Heinemann) and Fluid loading on fixed offshore structures (HMSO). Wrote fluid loading section of DEn/HSE "Guidance notes" and contributed to the development of offshore ISO standards.

1973 - 1977: Freeman Fox and partners, contributed to preliminary design of Hong Kong mass transit railway, detailed design of Hull "Myton" swing bridge, construction supervision of Humber suspension bridge.

Mr Trevor Hodgson is in his second spell with Atkins, having been with them in total for well over thirty years. He has spent the majority of this time working in offshore-related areas, both in the technical execution of this work and in the management of teams of engineers to achieve specified goals. He has extensive experience of conceptual and detail design for jacket structures and topsides, including over thirty platforms in SE Asia, and concrete structures in the North Sea and worldwide. His experience encompasses both shallow and deeper water platforms of steel and concrete construction, drilling riser and conductor analysis, semi-submersible and FPSO vessels, high-speed aluminium surface craft, and even peer review for the nuclear industry. He has recently been involved in the development of concepts and detailed designs for the offshore

renewable energy market, including wind, wave and tidal energy conversion devices, most recently Wind Turbine Generator (WTG) substructures. He is highly experienced in the application and interpretation of advanced finite element analysis methods for the design process and has used this experience to great effect in the development and support of engineering software, primarily the ASAS: OFFSHORE suite for the oil and gas industry, now part of ANSYS. He is the author of numerous texts on structural design and analysis, was convenor of a panel covering Structural Analysis of Fixed Concrete Platforms for the ISO standard on offshore installations, and lectures for ASRANet and the Universities of Glasgow and Strathclyde on offshore structures and renewables.