

## About The Course

The costs of offshore wind are currently significantly higher than onshore wind. A significant contributor to this higher cost is the cost of the foundations for the turbines. Hence a rational optimized design of foundation for wind turbines is essential to reduce the overall cost.

This course gives a detailed knowledge about the design and analysis of monopile and jacket structure foundations . This course also includes the soil pile interaction and the dynamic responses.

This course will provide a general overview of the aero-servo hydro elastic software OPEN FAST and the different engineering models behind the code in order to represent the coupled dynamics of offshore wind systems.

## Who should attend?

Engineers and researchers involved in the design of offshore and wind farm foundation , contract engineers , wind turbine installation companies , team leaders , conversion engineers , Project engineers and managers, offshore controls engineers, safety inspectors will benefit from attending the course. The course is innovative in both content & structure with a careful balance of theory and practice.

## Cost

The registration fee of the workshop Will be £750 +VAT (VAT UK ONLY) Which includes course notes.

## Payment

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

## Contact Us

ASRANet  
Limited

W [www.ASRANet.co.uk/courses](http://www.ASRANet.co.uk/courses)

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# Foundation Design of Offshore wind turbine Structures ONLINE

**15-16 April 2024**



(A Maritime Company for Courses, Conferences,  
and Research)

**PROGRAMME (All timings are in BST (GMT+1))**

**Monday 15<sup>th</sup> April 2024**

09:00 – 10:30 **Lecture 1:** Introduction and overview of on-shore wind turbine structures & foundations:

**Dr.Moritz Braun**

10:30–11:00 *Break*

11:00–12:30 **Lecture 2:** : Basics of structural design

**Dr.Moritz Braun**

12:30 – 13:00 *Lunch*

13:00 – 14:30 **Lecture 3:** Load assumptions and structural modeling including FE analysis.

**Dr.Moritz Braun**

14:30–15:00 *Break*

15:00 – 16.30 **Lecture 4:** Geotechnical aspect of Offshore foundations

**Dr Joshua Omer**

**Tuesday 16<sup>th</sup> April 2024**

09:00 – 10:30 **Lecture 5:** Design of pile foundations-1

**Dr Joshua Omer**

10:30 – 11:00 *Break*

11:00 – 12:30 **Lecture 6** Design of pile Foundations- 2

**Dr Joshua Omer**

12:30 – 13:00 *Lunch*

13:00 – 14:30 **Lecture 7:** Introduction to Openfast for offshore wind turbine modelling and its pre-processing

**Dr Yang Yang**

14:30 –15:00 *Break*

15:00 – 16:30 **Lecture 8:** Demonstration of offshore wing turbine foundation modelling and load calculation under different conditions

**Dr. Yang Yang**

**Dr Joshua Omer**



Dr Joshua Omer is a Senior Lecturer in Geotechnical Engineering in the Faculty of Engineering, Computing and Environment, Kingston University, London. He holds a First-Class honors BEng in Civil Engineering, a MSc in Structures and PhD in Geotechnical Engineering specializing in Piled Foundations. He has over 30 years, having worked both in industry and academia in the UK and overseas. He has undertaken a range of consultancy projects and published over 60 research papers in journals and conferences, supervised several PhD students and served as external examiner for PhD theses in UK and overseas universities. Dr Omer is a past recipient of the biannual David Douglas Prize and lecture, awarded by the South Wales Institute of Engineers, UK, for engineering excellence in a paper competition open to all engineers working in South Wales region. He is a former Royal Society Industrial Fellow and winner of the Research & Development award of the Institution of Civil Engineers. Dr Omer is a member of the editorial board of the Geotechnical Case studies Journal of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE) and represents the British Geotechnical Association in the ISSMGE Technical Committee TC107-Lateritic Soils. He is also a member of the Drilled Shafts Technical Committee of the Deep Foundations Institute, USA.

**Dr. Moritz Braun**



Moritz Braun, Dr., is the head of the department for ship reliability at the German Aerospace Center of Maritime Energy Systems in Geesthacht, Germany. He holds a B.Sc. in mechanical engineering (2012), an M.Sc. in Marine Technology (2014) and a Doctor of Engineering (2021). For his doctoral thesis, he received the Curt Bartsch Award of the German Society for Maritime Technology. His research focuses on the structural integrity assessment of large engineering structures and in particular on fatigue and fracture mechanics. He has about 70 publications in the corresponding fields. He is the delegate of the German Welding Association (DVS) at the International Institute of Welding (IIW) in 'Commission XV: Design, Analysis, and Fabrication of Welded Structures', the German representative in the International Ship and Offshore Structures Congress (ISSC) technical committee 'V.7 Structural Assessment During Operations', and the deputy chairman of the working group 'Damages of Ship Structures' of DVS.

**Dr Yang Yang**



Dr. Yang Yang. Dr. Yang was a postdoctoral research associate in Liverpool John Moores University during Oct. 2018 to Dec. 2020. He is now an associate professor based in Ningbo University since May 2021. He has published more than 60 papers and 11 papers in refereed SCI journals as the first author. Dr Yang has been granted for more than 10 projects from the Nature Science Foundation of China, Nature Science Foundation of Zhejiang Province, and other industrial corporations. He is devoted to the development of a fully coupled modeling methodology, structural control measure, and structural healthy monitoring algorithm for offshore energy systems.

Dr. Yang is a very professional user of FAST/OpenFAST and has developed a seismic coupled analysis and structural control architecture for fixed bottom offshore wind turbines based on FAST. In addition, he has developed a fully coupled framework (F2A) for floating offshore wind turbines based on AQWA and OpenFAST, and F2A is released to the public for free to use. In terms of the coupled modeling of an integrated floating wind-wave-current energy system, he has developed a numerical tool by implementing PTO modeling capability within F2A.