

About The Course

Wind energy is pivotal in global electricity generation and achieving future essential energy demands and targets. Today, the most commonly used wind turbine tower type is the cantilever tubular steel tower, consisting of a number of cylindrical and/or conical shell parts. Such towers are fabricated in a factory by a) roller-bending a flat steel plate into a can with the desired cylindrical or conical shape and b) butt-welding the two adjacent longitudinal edges of the can to each other to form a closed shell. The course will cover the design aspects of onshore wind turbine structures including foundations. Structural design aspects will be dealt for both local and global responses. Load modelling will be done. Geotechnical aspects both for stiff soil and soft soil will be dealt.

The foundation for on land wind turbine towers can be grouped into two types: (1) Spread foundations (2) Piled foundations. In both the foundation types, an interface which is embedded in foundation concrete must be provided between the turbine tower and foundation to ensure connectivity and stability. The Design aspects of both these types of foundation will be done.

Who should attend?

The course is intended for Engineers, Operations managers, Fabricators, Applied Scientists, and Technologists interested in the design of onshore wind turbine structures & foundations.

COST

The registration fee of the workshop will be £795 + VAT 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

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Design of onshore wind turbine Structures & Foundations ONLINE

27-28 May 2024



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

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

Monday 27th May 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:** Design assessment of weld seams in steel towers for wind energy plants

Dr. Andreas Gericke

Tuesday 28th May 2024

09:00 – 10:30 **Lecture 5:** : Manufacturing principles on steel towers for wind energy plants

Dr. Andreas Gericke

10:30 – 11:00 *Break*

11:00 – 12:30 **Lecture 6** Geotechnical Aspects of various types of foundations

Dr Joshua Omer

12:30 – 13:00 *Lunch*

13:00 – 14:30 **Lecture 7:** Design of Spread & Pile foundations I

Dr Joshua Omer

14:30 –15:00 *Break*

15:00 – 16:30 **Lecture 8:** Design of Spread & Pile Foundation II

Dr. Joshua Omer

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 Geo-engineering 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. Andreas Gericke



Dr. Andreas Gericke is the head of the department for Thermal Joining Engineering at the Fraunhofer Institute for

Large Structures in Production Engineering (IGP) in Rostock, Germany. He is a certified International Welding Engineer as well a certified Data Scientist, and leads his research group of over 20 people, including 12 engineers, in the topics of welding, brazing, and thermal spraying and manages various laboratories for material analysis, mechanical testing and welding at Fraunhofer IGP.

In addition to his research and development activities, he is also a globally operating auditor for the officially notified Testing-, Monitoring-, Certification body "MVO08" in the field of "Welded Components made from Steel" especially for towers for wind energy plants and an employee of the ISO 17025 accredited test laboratory at Fraunhofer IGP. He holds a B.Sc. and M.Sc. in industrial engineering and a Doctor of Engineering in the field of welding metallurgy. His main research topics focusses on the material science and integrity of thermally joined structures – especially fatigue – and on the development and automation of thermal joining process and quality assurance.

Dr. Gericke is member of various national and international technical commissions and working groups at the German Welding Association (DVS) and the International Institute of Welding focussing on welding processes, material science, design assessment and structural strength, fatigue improvement, automation and HSE.