EMPIRE
engineering

Training Courses

We're on a mission to support the offshore wind

industry with advice, insight and technical know-how.

01 SESSION

Foundation Concept Types and Selection

- Introduction to Basic Foundation Types
- Terms and Abbreviations
- Pros and Cons of each type
- Factors enfluencing concept selection

Coffee

02 SESSION

Design Stages and Process

- Preliminary data collection
- Design Basis A, B and C
- Employers Requirements
- Concept, Tender and FEED Design stages
- Detailed Design- Detailed design outline/analysis/reports required
- Certification
- Other inputs to design process

Lunch

03 SESSION

Load Iteration Process

- Why ILA is required
- Types of ILA
- Brief outline of each, with Pros and Cons
- Roles and responsibilities
- ILA typical roadmap / workflow /duration
- Key parts
- Risks and Mitigations

Coffee

04 SESSION

Certification

- Why Certify?
- Different certification bodies
- Process of certification
- Challenges

01 SESSION

Fabrication, Transport and Installation

- Input data requirements
- Fabrication limits and effect on design
- Tolerances and their effect
- Analyses required for T&I (e.g. pile driving, sea fastening)
- How T&I will impact the design
- Installation challenges

Coffee

02 SESSION

Contracts and Tendering

- Contracting and Tender strategies
- Full EPCI vs multi-contracting approaches
- Pros and Cons.

01 SESSION

Soil investigation and laboratory testing

- Welcome and Content
- Stages and aim of soil investigation campaigns
- Introduction to in-situ and laboratory test methods
- Pros and Cons

Coffee

02 SESSION

Determination of soil parameters

- Terms and Abbreviations
- Codes and Standards
- Linking soil parameters and foundation design
- Introduction to calculation methods

Lunch

03 SESSION

Geotechnical design principles and scenarios

- Introduction to types of foundations
- Overview of design principles and scenarios
- Soil-Structure Interaction
- Effects of cyclic loading

Coffee

04 SESSION

Case studies

- Presentation of selected case studies
- Discussion about design drivers and design challenges

01 SESSION

Advanced geotechnical design methods 1

- Recap from day 1
- Introduction to PISA project and advanced geotechnical design methods
- Introduction to constitutive models and soil parameters

Coffee

02 SESSION

Advanced geotechnical design methods 2

- Derivation of soil-structure response curves
- Implementation in geotechnical design workflow
- Special considerations about cyclic loading
- Comparison to traditional design methods
- Course Summary and Learnings

01 SESSION

Introduction to Load Iteration Processes

- Welcome and Content
- Introduction to Integrated Load Analysis, Coupled Analysis and Integrated Load Iteration
- Terms and Definitions
- Why Load Iteration is performed
- Different Methodologies and Comparisons
- Additional Factors

Coffee

02 SESSION

Roles and Responsibilities

- High level Iteration overview
- The Roles and Responsibilities of each participant

Lunch

03 SESSION

Key Parts of ILA

- Importance of Input Data
- Soils
- Wave Loading
- Wind Turbine Loading
- Super Elements
- Technicalities of Combining/Sequential Analyses
- Design Challenges

Coffee

04 SESSION

Risks, Mitigations and Project Specifics

- Where it can all go wrong

Empire Engineering Training Agenda 2021

01 SESSION

Introduction

- Terms and definitions
- Connection types
- History of grouted connections in offshore wind
- Pros and cons

Coffee

02 SESSION

Sizing Process

- Codes and Standards
- Grout material
- Load paths through grouted connections
- ULS/FLS considerations
- DNVGL-ST-0126 Linear analytical method
- DNVGL-RP-0419 FEA method

Let's take the next step

By now you should know us a little more.
Let's get the ball rolling.

Why not give our team a call and discuss your project?

We're ready to help, advise and take the strain with your technical challenges.

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