

An Introduction to Offshore Geophysics and Geotechnical Engineering

Imperial College London

Wednesday 9th & Thursday 10th June 2021

Wednesday 9th June 12:00 – 15:40

- 12:00 Welcome & Introduction** **Richard Jardine**
Imperial College
- 12:10 Industry Overview & Site Investigation Planning** **Mick Cook**
Mick Cook Limited
- Overview
 - Seabed Risk
 - Types of survey
 - Desk studies & planning
- 12:40 Introduction to Positioning and Seabed/Subsea Surveying** **Will Hodshon**
Vysus Group
- Positioning basics (UTM, Zones, Spheroids, conventions)
 - Multibeam echosounder systems
 - Sidescan Sonars
 - Sub-bottom profiling
- 13:10 Introductory Seismic Principles** **Dei Huws**
Bangor University
- Modes of propagation
 - Controls on propagation velocity
 - Losses
 - Effect of an interface
 - What is a seismic trace?
- 13:40 - BREAK**
- 14:00 Data Interpretation** **Gayle Hough**
BP
- Geophysical interpretation applications
 - End users and their needs
 - Hazard interpretation for Facilities
 - Hazard interpretation for Wells
- 14:30 The Use of 3D Seismic Data in Site Investigation** **Øyvind Ruden**
Shell
- The 3-D exploration seismic technique
 - 3D vs 2D – benefits and limitations
 - The power of 3D
 - Case studies – an integrated approach
- 15:00 Offshore Geohazard Assessment** **Harry Eady**
Fugro
- What are Geohazards?
 - Why investigate them?
 - A strategy for investigation & risk analysis
 - Case study

Thursday 10th June 12:00 – 15:45

- 12:00 Geotechnical Investigation Systems** **Andy Barwise**
Innogy
- Seabed sampling & CPT systems
 - Downhole drilling, sampling and in-situ testing
 - Different types of vessel
- 12:30 Data integration & Geographical Information Systems** **Chris Steven**
Fugro
- Using geological knowledge to guide interpretation & integration
 - Integrating geophysical & geotechnical data to refine stratigraphy
 - Applying geological solutions to engineering problems
 - The value and applications of GIS
- 13:00 Geotechnical Analysis for Pipelines** **Patrick Moran**
Inosys
- Key geotechnical parameters
 - Site investigation requirements
 - Design issues to be addressed
 - Case studies
- 13:30 – BREAK**
- 13:50 Shallow Foundations, Suction Caissons & GBS Design** **Stelios Panayides**
Subsea 7
- Concepts & Definition
 - Jack-up Rigs
 - Suction Installed Foundations
 - Gravity Based Foundations
 - Summary
- 14:20 Pile Design for Offshore Structures** **Amin Aghakouchak**
Ørsted
- Overview
 - Axial pile performance
 - Lateral pile performance
 - Pile installation
 - Other offshore issues (scour, setup)
- 14:50 Careers in Offshore Energy** **Stelios Panayides**
Subsea 7
- 15:20 Q&A, final comments and closure** **Tom Nee**
Fugro
&
Richard Jardine
Imperial College