



## SCOUR AROUND MARINE STRUCTURES

Dealing with scour related problems in water environments

This two-day, thematic course introduces you to the procedures of analysis related to assessing scour risk at marine structures. The focus is on offshore wind turbine foundations and how to protect against or mitigate the scour formation by applying scour protection systems of, for instance, rock dump or mattresses. After the course the participant will be able to identify and define scour issues, assess the risk of scour and possible mitigation solutions for various types of marine structures and obtain the recent knowledge gained over the last decade from significant development and research within the field of marine scour.

Scour is a well-known issue for hydraulic and marine engineering. Scour occurs when structures are placed on erodible beds and exposed to current and waves. The foundations of e.g. offshore wind turbines are often erected in harsh hydrodynamic environments, exposed to tidal currents and large waves individually or in combination. Therefore, it is essential to have a detailed understanding of how these hydrodynamic environments affects the structure as a whole, including the foundation and the interaction between flow, structure and sea bed to ensure short- and long term stability. Evidently, the formation of scour around marine structures can pose a threat to the structural stability and the cables transporting electricity.

### COURSE TOPICS

- Flow and force processes in the presence of cylindrical structures
- Explain drag, inertia and lift forces in currents and waves
- Scour around marine structures including offshore wind turbine foundations, gravity based structures (GBS), cables and pipelines
- Scour related problems: depravation of the general sea bed level, migration of large bed forms, edge scour and sinking of scour protections.
- Scour in complex soils
- Scour protections systems (counter measures): types, rock dump, mats, installation and monitoring
- Hands-on exercises including computer simulations in MIKE 21

### TARGET GROUP AND PREREQUISITES

Professionals in hydraulic or engineering and management working with design, installation and commissioning of marine structures. You should preferably have a background in coastal, port or marine engineering and management.

### THE ACADEMY BY DHI

THE ACADEMY offers a palette of courses and capacity building packages designed to fit your needs and challenges. We offer standard and/or tailored training - face-2-face as well as online.

**MIKE Powered by DHI** courses focus on practical skills, hands-on exercises and teaching you how to get the most out of your software. These courses also enable you to understand the power of the MIKE tools for building decision support systems.

**Thematic courses** allow you to apply concepts, applications and decision support principles to the entire business process within current areas: aquaculture and agriculture, energy, climate change, flooding, coast and marine, surface and groundwater, urban water, industry, environment and ecosystems, product safety and environmental risk, etc.

**Our trainers** are experienced professionals, many of whom are recognised international experts in their fields. The use of highly skilled trainers guarantees the quality of THE ACADEMY courses.

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