



COASTAL SEDIMENT TRANSPORT AND MORPHOLOGY

Basic processes and models for sediment transport and bed dynamics in the coastal zone

This modular, self-paced, online course presents a broad overview of the field of coastal engineering in a number of lectures. First lecture gives a basic course in coastal hydraulics, i.e. waves and currents. Then a lecture focusing on the description of the detailed mechanisms behind sediment transport in the coastal zone is given. Having established the basic process understanding an introduction to different coastal protection schemes is given. In order to quantify the coastal phenomena in real projects, the most used numerical model types are presented in two overview lectures describing the background for numerical modelling as well as the different possible applications. Finally the course is rounded off by a discussion of how to couple the knowledge and modelling capabilities for estimating the impact of climate change on the coast.

Coastal engineering is a field where three skills are needed: 1) A basic understanding of the processes, 2) (numerical) modelling skills and 3) a thorough understanding of the context of the given project (coastal protection, morphological impact from structures, climate change, etc.).

Coastal environments are transient, continuously reshaped by the natural processes of the waves, tides, surges, erosion and deposition.

COURSE TOPICS

- Basic terms and concepts
- Wave and currents in the surf zone
- Sediment transport mechanisms
- Coastal protection schemes
- Numerical models for coastal processes
- Overview of possible applications of different model types
- Climate change – impact on coasts
- Small exercises with answers

TARGET GROUP AND PREREQUISITES

Students who want to look into what coastal engineering is about. Young professionals with a need for gaining a basic background for the job as a researcher or a consultant coastal engineer. Experienced engineers who feel the necessity for a brush up on their basic knowledge and that an introduction to the latest models would benefit him or her. Professionals from other branches engineering, e.g. urban, hydrology or marine engineering.

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.

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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