

Field Measuring Techniques in Coastal Engineering

Naturmessungen im Küsteningenieurwesen

Prüfungs-/Studienleistungen K / unbenotete Hausübung	Art/SWS 2V / 2Ü	Sprache E	LP 6	Semester SS	Prüfnr. ?
Dauer der Hausarbeit/-übung 40					

Ziel des Moduls

The module imparts knowledge about the basics, capabilities and the field of application of different measuring techniques used in coastal engineering. Modern techniques and devices are part of the module in order to capture, process and analyze hydro- and morphodynamic parameters.

After the successful participation in this course the students are able to:

- Apply statistics and signal processing to measured data
- Analyze sea-state data and assess characteristic parameters
- Understand the set-up and infrastructure of survey vessels
- Plan the use of unmanned aerial and underwater vehicles (ROVs, AUVs, UAVs)
- Apply different techniques for measuring currents
- Understand the basics of modern echo-sounders (multibeam echo-sounder, sub-bottom profiler)
- Assess the characteristics of coastal sediments
- Apply different techniques of sediment sampling
- Measure and analyse water quality parameters (CTD, pH, dissolved oxygen)
- Design stationary equipment carrier systems (poles, buoys, landers)
- Plan field surveys and assess involved risks
- Present relevant results / write scientific reports

Inhalt des Moduls

- Lectures regarding above-mentioned topics accompanied by exercises
- Practical examples based on the scientific work of the Ludwig-Franzius-Institute and the Coastal Engineering Group, University of Queensland (UQ)
- Practical training in the field / in the laboratory
- Exchange and video tutorials with students of UQ

Workload	180 h (60 h Präsenz- und 120 h Eigenstudium einschl. Prüfungs-/Studienleistung)
Empf. Vorkenntnisse	Wasserbau und Küsteningenieurwesen; Umweltdatenanalyse
Literatur	-
Medien	PPT, Matlab-Übungen
Besonderheiten	One-day excursions

Modulverantwortlich	Welzel, Mario			
Dozenten	Welzel, Mario (LUH); Cossu, Remo (UQ)			
Betreuer	Welzel, Mario; Scheiber, Leon			
Verantwortl. Prüfer	Welzel, Mario			
Institut	Ludwig-Franzius-Institut für Wasserbau, http://www.lufi.uni-hannover.de Fakultät für Bauingenieurwesen und Geodäsie			

Studiengangsspezifische Informationen	P/W und Kompetenzbereich in Abhängigkeit von Vertiefungsrichtung			
	Konstruktiver Ingenieurbau	Wasser- und Küsteningenieurwesen	Windenergie-Ingenieurwesen	Baumanagement
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