Dredging and Land Reclamation Training Course: Dredger Selection, Pay Surveys and Contracts

21 – 25 March 2027
Riyadh - KAFD district five-star



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Ref: 1323_22549 **Date:** 21 – 25 March 2027 **Location:** Riyadh - KAFD district five-star **Fees:** 20000 SAR

Introduction:

Dredging and land reclamation, covering dredger selection, pay surveys and contracts, is a one-week course for port, marine and coastal project engineers and dredging contract managers, ending with a Dredging and Reclamation Execution Plan with volume and cost estimate for a case port expansion. Projects lose money when the wrong dredger meets unexpected soil, when pre-dredge and post-dredge surveys disagree on pay quantities, and when hydraulic fill settles after handover. Nominees already supervise or administer marine works and learn through a modelling build of volumes, production and cost. CoreConcept Training Center delivers this course on dredging and land reclamation.

Course Objectives:

- Define capital and maintenance dredging scope, design depths, overdepth allowances and siltation-driven dredging frequency for a port or channel
- Select cutter suction, trailing suction hopper, backhoe or grab dredgers for given soil, depth and placement distance and estimate their production
- Specify hydrographic and geotechnical surveys and calculate pay volumes from pre-dredge and post-dredge survey surfaces
- Plan disposal, beneficial reuse and hydraulic fill placement for reclamation, with ground improvement needs identified
- Set turbidity controls, HSE measures and contract measurement rules that reduce disputes, variations and claims
- Build a Dredging and Reclamation Execution Plan with volume balance, fleet schedule and cost estimate for a case port expansion

Target Audience:

- Port and harbour engineering teams responsible for channel, basin and berth depth works
- Marine works site engineering teams that supervise dredgers, pipelines and fill placement
- Coastal and waterfront project engineering teams that plan reclamation platforms for new land
- Hydrographic and geotechnical survey teams that provide depth, soil and volume data
- Contract administration and quantity surveying teams that measure, certify and settle dredging works

Course Outline:

Day 1: Dredging Project Foundations and Port Depth Requirements

- Capital Dredging Versus Maintenance Dredging Scope and Drivers
- Navigation Channel and Basin Design Depth with Overdepth Allowances
- Siltation Rate Assessment for Maintenance Dredging Frequency
- Dredging Project Life Cycle from Feasibility to Handover
- Current-State Review of a Case Port Dredging Requirement

Day 2: Dredger Types, Production Models and Fleet Selection

- Cutter Suction Dredger Cutting, Pumping and Spud Operation
- Trailing Suction Hopper Dredger Loading, Overflow and Sailing Cycle
- Backhoe and Grab Dredger Bucket Cycles and Barge Logistics
- Dredger Selection Matrix by Soil, Depth and Distance
- Dredger Production Estimating with Cycle Time and Mixture Density

Day 3: Hydrographic Surveys, Pay Volumes and Dredged Material Placement

- Multibeam Echosounder Surveys with Tide and Heave Correction
- Geotechnical Boreholes, Cone Penetration Tests and Sediment Sampling Programme
- Pre-Dredge and Post-Dredge Surface Comparison for Pay Volumes
- Bulking Factor and In-Situ Versus Hopper Volume Conversion
- Disposal Site Options and Beneficial Reuse of Dredged Material

Day 4: Reclamation Methods, Environmental Controls, Contracts and HSE

- Hydraulic Fill Placement by Pipeline, Rainbowing and Bottom Dumping
- Vibro-Compaction, Vertical Drains and Surcharge Ground Improvement Overview
- Turbidity Sensor Network and Silt Curtain Control Measures
- Dredging Contract Measurement Rules, Variations and Claims Handling
- HSE Controls for Floating Pipelines, Crew Transfer and Night Works

Day 5: Modelling Build of the Dredging and Reclamation Execution Plan

- Case Port Expansion Briefing and Survey Data Review
- Case Dredged and Fill Volume Balance Model Build
- Case Dredger Fleet Selection and Production Schedule
- Case Cost Estimate with Mobilisation, Unit Rates and Contingency
- Dredging and Reclamation Execution Plan Completion and Peer Review

Skills You Will Gain:

- Dredger Production Estimating
- Dredging Fleet Selection
- Hydrographic Survey Interpretation
- Pay Volume Calculation
- Reclamation Fill Planning
- Dredging Plume Control
- Marine Works Claims Handling
- Dredging Cost Estimating

Why Attend This Course:

- Deliver a Dredging and Reclamation Execution Plan with volume and cost estimate to the project director and the port engineering committee
- Decide which dredger type and fleet size suits a given soil, depth and placement distance before tender documents are issued
- Avoid pay quantity disputes, unplanned fill settlement and turbidity stoppages that delay marine works and inflate final accounts
- Pass on survey comparison, production and cost estimating templates to site engineers and quantity surveyors on the next dredging contract

Conclusion:

Back at work, the participant hands the project director and port engineering committee a Dredging and Reclamation Execution Plan that sets out dredged and fill volumes, the chosen fleet, the production schedule and a cost estimate. Sponsors use it to approve the dredging strategy, set the tender basis and agree how pay quantities will be measured. After the first survey and payment cycle, the unit should compare measured volumes, actual dredger output, turbidity incidents and claims raised against the planned figures and update the estimating model.

Frequently Asked Questions FAQ:

What should participants know before a dredging and land reclamation course?

Participants should already work on marine, port or coastal projects and be able to read survey drawings and use spreadsheets. Bringing a recent survey plan, dredging specification or bill of quantities helps them apply the modelling exercises to their own works.

How does dredging and land reclamation differ from a coastal engineering or green ports course?

It concentrates on executing dredging and fill works: dredger choice, production, surveys, pay volumes, placement, contracts and site HSE. Coastal engineering courses cover waves, breakwaters and shore protection design, and green port courses cover emissions and wider port environmental strategy.

Why do pre-dredge and post-dredge surveys matter in dredging and land reclamation contracts?

They decide what the contractor is paid. Comparing the two survey surfaces within agreed tolerances and overdepth limits gives the pay volume, so survey method, tide correction and measurement rules must be fixed before work starts to avoid disputes.

What do participants take back from the dredging and land reclamation course?

Participants take back a Dredging and Reclamation Execution Plan for a case port expansion, with a volume balance, dredger fleet schedule and cost estimate, plus production, survey comparison and cost templates that can be adapted to their own projects.