

COURSE OVERVIEW OE0099

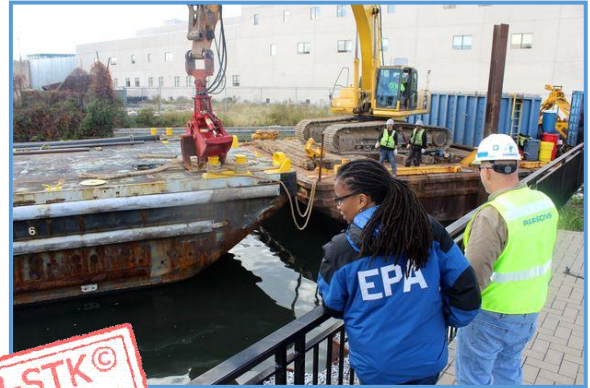
Introduction to Dredging and Siltation Management

Course Title

Introduction to Dredging and Siltation Management

Course Date/Venue

Session 1: August 17-21, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
 Session 2: December 22-26, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

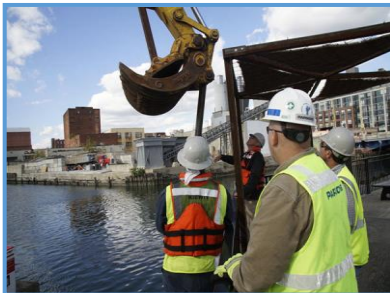
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Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.



This course is designed to provide participants with a detailed and up-to-date overview of Introduction to Dredging and Siltation Management. It covers the purpose of dredging and its key applications in the petroleum industry; the types of dredging operations and the causes and impact on siltation operations; classifying dredging equipment, dredging and siltation challenges in petroleum operations and international standards for dredging and siltation management; the mechanical dredging techniques, hydraulic dredging techniques and dredging project planning and execution; and the dredging material disposal and sediment management.



Further, the course will also discuss the impact of dredging on coastal and marine ecosystems; the proper monitoring and quality control in dredging operation; the siltation processes in marine and offshore environments; the sediment control measures in offshore and coastal areas, sediment transport modeling and prediction and engineering solutions for siltation management; and the environmental best practices for siltation management including remote sensing and hydrographic surveying for dredging.

During this interactive course, participants will learn the automation and digitalization in dredging operations; the sediment dewatering and treatment technologies; the climate change and its impact on dredging and siltation; the sustainable dredging and eco-friendly innovations; the emerging technologies in dredging operations; and the predictive analytics for sedimentation forecasting.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a fundamental knowledge on dredging and siltation management
- Discuss the purpose of dredging and its key applications in the petroleum industry
- Identify the types of dredging operations and the causes and impact on siltation operations
- Classify dredging equipment, dredging and siltation challenges in petroleum operations and international standards for dredging and siltation management
- Apply mechanical dredging techniques, hydraulic dredging techniques and dredging project planning and execution
- Carryout dredging material disposal and sediment management and discuss the impact of dredging on coastal and marine ecosystems
- Implement proper monitoring and quality control in dredging operation as well as siltation processes in marine and offshore environments
- Illustrate sediment control measures in offshore and coastal areas, sediment transport modeling and prediction and engineering solutions for siltation management
- Apply environmental best practices for siltation management including remote sensing and hydrographic surveying for dredging
- Carryout automation and digitalization in dredging operations and sediment dewatering and treatment technologies
- Determine climate change and its impact on dredging and siltation as well as sustainable dredging and eco-friendly innovations
- Discuss the emerging technologies in dredging operations and predictive analytics for sedimentation forecasting

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

Who Should Attend


this course provides an overview of all significant aspects and considerations of introduction to dredging and siltation management for coastal and marine engineers, civil engineers, environmental engineers, project managers, construction managers, coastal and ocean scientists, port and harbor operators and technical staff.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.


Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

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The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Course Fee

US\$ 8,000 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Captain Sergey Kole, is an **International Expert** in **Port Operations & Management** with over **25 years** of **onshore and offshore** experience within the **Oil & Gas, Petroleum and Refinery** industry. His expertise widely covers in the areas of **Tanker Vetting & Inspection, International Ship and Port Facility Security Code (ISPS) Code, Marine Vetting & Audit Criteria Manual for Tank Ships, Marine & Ship Vetting, Vetting Process & Marine Safety Criteria, Tanker Vetting for Terminals, Ship Vetting, Marine**

Terminal Operations & Management, Marine Hazards Prevention & Control, Marine Communication Systems, Marine Safety, Ship Management, Oil Terminal Planning, Vessels Operations, Terminal Management & Support Operations, Oil Spill Contingency & Emergency Response Plan, Qualitative & Quantitative Risk Assessments, Terminal Planning, Oil Tanker Storage Planning, Cargo Transfer Handling, Loading & Discharging, Ballasting, Tank Cleaning, Crude Oil Washing, Ship Handling, Radar Navigation, Navigational Aids, Meteorological Data Review, Sea & Weather Condition Monitoring, ERT Vessel Coordination and Transport & Distribution Carrier. Further, he is well-versed in **Sea-going Personnel Human Resource Management, Survival Craft & Rescue Boats, Dynamic Positioning, Anti-Piracy Preparedness & Response, Shipping Maintenance System, Oil & Chemical Tanker, Liquefied Gas Tanker, Inert Gas System, Crude Oil Tanker & Gas Carrier, Offshore Logistics & Supply Management, Marine Fleet Management & Operations, International Maritime Conventions & Codes, Marine Radar, Port Traffic Control Systems & Instrumentation, H²S Hazard Awareness, Firefighting, Medical Care Onboard, Carriage of Dangerous & Hazardous Substances and Ballast Water & Sediment Management.**

During his career life, Captain Sergey has gained his technical and marine expertise through various challenging key positions such as being the **Captain, Operations Director, Project Manager, Port Supervisor, Master** of General Cargo Ship, **Master** of Container Ship, **Chief Officer, Marine Operations Specialist, Marine Coordinator, On-call Duty Officer, Crewing Consultant, 2nd Officer, Ship Chandler** and **Senior Instructor/Trainer** for several international companies such as **ZADCO, AMEC Foster Wheeler, Fircroft Engineering Services, Ltd., Rusalina Yacht Company, Van Oord Offshore, Exxon Neftegaz Ltd (ENL), Jr Shipping, Carisbrooke Shipping, Unicorn Petrol ve Kimya, Q Shipping BV, m/v Tradeport, Miedema Shipping CV, Rah Management BV, Petrobulk Maritime Inc., Empross Lines Ship Management, Melcard Ltd., Aquarian Shell Marine Inc., Mercy Baaba and Square Ltd.**

Captain Sergey has a **Bachelor's** degree in **Navigation in Nautical Studies** from the **Kiev State Academy of Water Transport, Ukraine** and holds a **Master Mariner (Unlimited) Certificates of Equivalent Competency** from the **MCA, UK and NSI, Netherlands.** Further, he is a **Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)** and has delivered various trainings, courses, seminars, workshops and conferences internationally.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours: -

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to Dredging Definition & Purpose of Dredging • History & Evolution of Dredging Techniques • Key Applications in the Petroleum Industry
0930 - 0945	Break
0945 – 1045	Types of Dredging Operations Capital Dredging for New Construction • Maintenance Dredging for Navigation Channels • Environmental Dredging for Contamination Control • Land Reclamation Dredging
1045 - 1145	Siltation: Causes & Impact on Operations Natural vs. Anthropogenic Siltation • Impact of Siltation on Offshore Structures & Pipelines • Sediment Transport Mechanisms • Effects of Siltation on Marine Ecosystems
1145 - 1230	Classification of Dredging Equipment Mechanical Dredgers (e.g., Backhoe, Bucket, & Dipper Dredgers) • Hydraulic Dredgers (e.g., Cutter Suction & Trailing Suction Hopper Dredgers) • Specialty Dredgers (e.g., Auger, Airlift, & Jet Dredgers) • Selection Criteria for Different Dredging Projects
1230 – 1245	Break
1245 – 1330	Dredging & Siltation Challenges in Petroleum Operations Siltation Around Oil Terminals & Offshore Platforms • Sediment Accumulation in Intake & Discharge Channels • Environmental & Regulatory Challenges • Cost Considerations & Project Feasibility



1330 - 1420	International Standards for Dredging & Siltation Management International Maritime Organization (IMO) Guidelines • Environmental Impact Assessment (EIA) Requirements • Regulations for Offshore Dredging Projects • Compliance with National & Global Environmental Policies
1420 - 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

Day 2

0730 - 0830	Mechanical Dredging Techniques Overview of Mechanical Dredging Systems • Bucket Ladder Dredgers & Their Applications • Clamshell Dredgers & Their Efficiency • Backhoe Dredgers for Localized Dredging
0830 - 0930	Hydraulic Dredging Techniques Cutter Suction Dredgers (CSD) & Their Working Principles • Trailing Suction Hopper Dredgers (TSHD) for Offshore Use • Jet & Airlift Dredging Methods • Comparative Analysis of Hydraulic vs. Mechanical Dredging
0930 - 0945	Break
0945 - 1130	Dredging Project Planning & Execution Site Assessment & Pre-Dredging Surveys • Selecting the Appropriate Dredging Method • Developing a Dredging Schedule & Execution Plan • Risk Assessment & Contingency Planning
1130 - 1230	Dredging Material Disposal & Sediment Management Sediment Classification & Reusability • Onshore versus Offshore Disposal Methods • Beneficial Uses of Dredged Material • Regulatory Requirements for Dredged Material Disposal
1230 - 1245	Break
1245 - 1330	Impact of Dredging on Coastal & Marine Ecosystems Sediment Resuspension & Turbidity Concerns • Impact on Marine Habitats & Biodiversity • Measures to Minimize Environmental Damage • Case Studies of Environmentally Friendly Dredging Projects
1330 - 1420	Monitoring & Quality Control in Dredging Operations Real-Time Dredging Monitoring Systems • Bathymetric & Hydrographic Survey Techniques • Dredging Efficiency Assessment & Performance Metrics • Case Studies on Effective Dredging Project Management
1420 - 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

Day 3

0730 - 0830	Siltation Processes in Marine & Offshore Environments Understanding Sediment Transport Mechanisms • Role of Tides, Currents, & Waves in Siltation • Human-Induced Factors Influencing Siltation • Predictive Modeling for Siltation Management
0830 - 0930	Sediment Control Measures in Offshore & Coastal Areas Physical Barriers & Silt Curtains • Sediment Traps & Containment Structures • Turbidity Monitoring & Control Measures • Regulatory Requirements for Sediment Control



0930 - 0945	Break
0945 - 1130	Sediment Transport Modeling & Prediction Sediment Transport Models • Numerical Modeling Techniques for Siltation Analysis • Predicting Sediment Deposition Patterns • Case Studies on Successful Sediment Management
1130 - 1230	Engineering Solutions for Siltation Management Channel Design & Sedimentation Reduction Techniques • Coastal & River Engineering Solutions • Scour Protection for Offshore Structures • Adaptive Management Strategies
1230 - 1245	Break
1245 - 1330	Environmental Best Practices for Siltation Management Implementing Environmentally Sustainable Dredging Practices • Using Nature-Based Solutions for Sediment Control • Environmental Policies for Siltation Management • Case Studies on Sustainable Sediment Management
1330 - 1420	Case Studies on Dredging & Siltation Management Lessons Learned from Global Dredging Projects • Challenges & Solutions in Dredging Operations • Evaluating Past Failures in Siltation Management • Future Trends & Innovative Solutions
1420 - 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three

Day 4

0730 - 0830	Remote Sensing & Hydrographic Surveying for Dredging Role of Remote Sensing in Monitoring Dredging Activities • Hydrographic Survey Techniques (LIDAR, Multibeam Sonar) • Integration of GIS in Dredging & Sediment Analysis • Real-Time Data Collection & Visualization
0830 - 0930	Automation & Digitalization in Dredging Operations Autonomous & Remotely Operated Dredging Systems • Dredging Automation & AI-Driven Decision-Making • Smart Dredging Equipment & Sensor Technology • Future Trends in Digital Dredging Solutions
0930 - 0945	Break
0945 - 1130	Sediment Dewatering & Treatment Technologies Mechanical Dewatering Methods (Filter Presses, Centrifuges) • Chemical Treatment of Dredged Sediments • Soil Stabilization Techniques for Reuse • Advances in Eco-Friendly Sediment Treatment
1130 - 1230	Climate Change & Its Impact on Dredging & Siltation Rising Sea Levels & Increased Sedimentation Rates • Effects of Climate Change on Coastal Erosion • Adaptive Strategies for Long-Term Dredging Management • Case Studies on Climate-Resilient Dredging Approaches
1230 - 1245	Break
1245 - 1330	Sustainable Dredging & Eco-Friendly Innovations Green Dredging Technologies • Use of Bioengineered Solutions for Sediment Stabilization • Energy-Efficient Dredging Practices • Regulatory Incentives for Sustainable Dredging



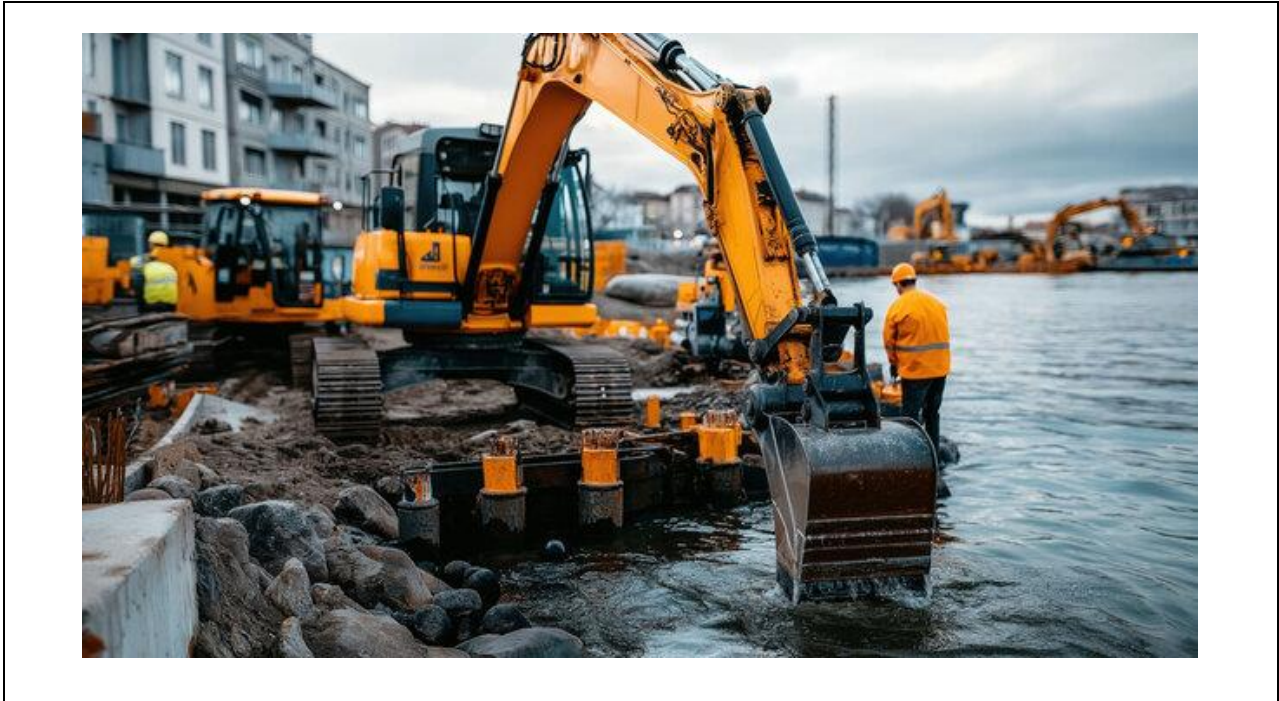
1330 - 1420	Future Challenges & Innovations in Dredging & Siltation Management <i>Emerging Technologies in Dredging Operations • Predictive Analytics for Sedimentation Forecasting • Future Dredging Initiatives • Industry Outlook & Research Opportunities</i>
1420 - 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	<i>Lunch & End of Day Four</i>

Day 5

0730 - 0930	Dredging Equipment & Operations <i>Overview of Dredging Machinery & Components • Demonstration of Dredging Techniques • Operating Dredging Control Systems • Maintenance of Dredging Equipment</i>
0930 - 0945	<i>Break</i>
0945 - 1130	Hydrographic Surveys & Data Analysis <i>Conducting a Hydrographic Survey • Analyzing Bathymetric Data • Mapping Sediment Accumulation Patterns • Using GIS Tools for Dredging Project Planning</i>
1130 - 1230	Interactive Session: Siltation Management Planning <i>Identifying Siltation Risks in Operations • Developing a Siltation Management Strategy • Selecting Appropriate Sediment Control Measures • Case Study Analysis of Siltation Issues</i>
1230 - 1245	<i>Break</i>
1245 - 1300	Group Exercise: Dredging Project Simulation <i>Creating a Project Execution Plan for a Dredging Operation • Selecting Equipment & Methodologies • Identifying Environmental & Operational Risks • Presenting Team Findings & Recommendations</i>
1300 - 1315	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1315 - 1415	POST TEST
1415 - 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org