

COURSE OVERVIEW DE1120

Brownfield Development and Execution

Course Title

Brownfield Development and Execution

Course Date/Venue

November 01-05, 2026/Sur Meeting Room,
Royal Tulip Muscat, Oman

Course Reference

DE1120

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 Brownfield Development and Execution. It covers the significance of brownfield projects in the petroleum industry; the key differences between brownfield and greenfield projects; the brownfield redevelopment strategies and brownfield assets and infrastructure assessment; the regulatory and environmental considerations and project management in brownfield development; the front-end engineering design (FEED) for brownfield projects and integration of new systems with existing facilities; and the structural and mechanical modifications.



During this interactive course, participants will learn the electrical and instrumentation upgrades and piping and process modifications; planning and scheduling brownfield execution; the shutdown, turnaround and tie-ins and simultaneous operations (SIMOPS); the brownfield construction and site challenges; the proper commissioning and start-up of brownfield projects; the operational readiness in brownfield projects and risk management in brownfield development; the asset integrity management in brownfield facilities; the digitalization and automation in brownfield execution, cost management and budgeting in brownfield projects; and the brownfield execution and troubleshooting.



Course Objectives/Outcomes & Benefits for the Participants

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

- Apply and gain an in-depth knowledge on brownfield development and execution
- Discuss the significance of brownfield projects in the petroleum industry and the key differences between brownfield and greenfield projects
- Carryout brownfield redevelopment strategies, assess brownfield assets and infrastructure and discuss the regulatory and environmental considerations
- Apply project management in brownfield development, front-end engineering design (FEED) for brownfield projects and integration of new systems with existing facilities
- Review structural and mechanical modifications and apply electrical and instrumentation upgrades as well as piping and process modifications
- Plan and schedule brownfield execution, perform shutdown, turnaround and tie-ins and manage simultaneous operations (SIMOPS)
- Identify brownfield construction and site challenges and apply proper commissioning and start-up of brownfield projects
- Ensure operational readiness in brownfield projects and carryout risk management in brownfield development and asset integrity management in brownfield facilities
- Carryout digitalization and automation in brownfield execution, cost management and budgeting in brownfield projects and brownfield execution and troubleshooting

Exclusive Smart Training Kit - H-STK®



*Participants of this course will receive the exclusive “Howard 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 a basic overview of all significant aspects and considerations of brownfield development and execution for environmental consultants, urban planners and developers, real estate developers, civil engineers, environmental engineers, property and asset managers, geotechnical engineers, construction managers, risk assessors and environmental auditors.

Course Fee

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

Accommodation

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

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

Haward's certificates are accredited by the following international accreditation organizations: -

-  British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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.

-  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.

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.

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:



Mr. Konstantin Zorbalas, MSc, BSc, is a Senior Petroleum Engineer & Well Completions Specialist with 30 years of offshore and onshore experience in the Oil & Gas, Refinery & Petroleum industries. His wide expertise includes Brownfield Development & Execution, Brownfield Projects: Planning, Engineering & Execution, Brownfield Modification & Revamp Projects, Oil & Gas Facility Development & Optimization, Mature Field Development & Production Optimization, Field Development Planning & Project Management, Oil & Gas Project Management & Execution, Facility Modification, Tie-In & Shutdown Planning, Production Facilities: Operations, Modification & Optimization, Brownfield Project Risk Management & Execution, OIP

Estimation & Range of Uncertainty, Waterflood Management, Water Flooding, Water Flooding & Reservoir Sourcing Issues, Water Flooding, Reservoir Souring & Water Breakthrough, Well & Reservoir Management and Monitoring, Fishing Operations, Drilling & Work-Over Operations, Workover Best Practices, Well Testing, Completion Design & Operation, Well Stimulation and Workover, Well Stimulation & Workover Planning, Well Completion, Servicing & Work-Over Operations, Completions & Workover, HSE in Work-Over & Drilling Operations, Well Testing Completion & Workover, Basic Drilling, Completion & Workover Operations, Advanced Drilling, Completion & Workovers Fluids, Cementing Integrity Evaluation, Cementing Design, Cement Integrity Assurance & Evaluation, Basic Cementing (Operations) & Basic Acidizing, Advanced Cementing Technology, Casing & Cementing, Advanced Cementing & Stimulation, Artificial Lift Systems, New Technology in Artificial Lift Systems, Artificial Lift Methods, Crude Oil Artificial Lift Operations, Artificial Lift Systems, Artificial Lift & Challenges, Artificial Lift Systems & Optimization Technology, Production Optimization with Artificial Lift System, Well Integrity & Artificial Lift, Formation Damage & Flow Assurance Issues, Formation Damage Evaluation, Prevention, Remediation & Control, Formation Damage (Causes, Prevention & Remediation), Well Completion Design & Operations, Crude Oil Market, Oil Reserves, Global Oil Supply & Demand, Government Legislation & Oil Contractual Agreements, Oil Projects & Their Feasibility (Revenue and Profitability), Oil & Gas Exploration and Methods, Oil & Gas Extraction, Oil Production & Refining, Technology Usage in Industrial Security; Oil & Gas Economics Modelling Evaluation Decision Making & Risk Analysis, Economic Evaluation & Global Profitability Criteria, Petroleum Economics, Fluid Properties & Phase Behaviour (PVT), Workovers & Completions, Acidizing Application in Sandstone & Carbonate, Well Testing Analysis, Reserves Evaluation, Reservoir Fluid Properties, Reservoir Monitoring, Heavy Oil Technology, Applied Water Technology, X-mas Tree & Wellhead Operations & Testing, Artificial Lift Systems (Gas Lift, ESP, and Rod Pumping), Well Cementing, Well Completion Design, Slickline Operations, Cased Hole Logging and Production Logging. Further, he is actively involved in Project Management with special emphasis in production technology and field optimization, performing conceptual studies, economic analysis with risk assessment and field development planning. He is currently the Senior Petroleum Engineer & Consultant of Abu Dhabi National Oil Company (ADNOC) Group of companies wherein he is involved in the mega-mature fields in the Arabian Gulf, predominantly carbonate reservoirs; designing the acid stimulation treatments with post-drilling rigless operations; utilizing CT with tractors and DTS systems; and he is responsible for gas production and preparing for reservoir engineering and simulation studies, well testing activities, field and reservoir monitoring, production logging and optimization and well completion design.

During his career life, Mr. Zorbalas worked as a **Senior Production Engineer, Well Completion Specialist, Production Manager, Project Manager, Technical Manager, Trainer, Technical Supervisor & Contracts Manager, Production Engineer, Production Supervisor, Production Technologist, Technical Specialist, Business Development Analyst, Field Production Engineer and Field Engineer.** He worked for many world-class oil/gas companies such as **ZADCO, ADMA-OPCO, Oilfield International Ltd, Burlington Resources** (later acquired by **Conoco Phillips**), **MOBIL E&P, Saudi Aramco, Pluspetrol E&P SA, Wintershall, Taylor Energy, Schlumberger, Rowan Drilling and Yukos EP** where he was in-charge of the **design and technical analysis** of a gas plant with capacity **1.8 billion m3/yr gas**. His achievements include **boosting oil production 17.2% per year** since 1999 using **ESP and Gas Lift systems**.

Mr. Zorbalas has **Master's and Bachelor's** degrees in **Petroleum Engineering** from the **Mississippi State University, USA**. Further, he is an **SPE Certified Petroleum Engineer, Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)**, an active member of the **Society of Petroleum Engineers (SPE)** and has numerous scientific and technical publications and delivered innumerable training courses, seminars and workshops worldwide.

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.
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Learning Design & Customization

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.

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: Monday, 01st of November 2026

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to Brownfield Projects <i>Definition & Significance of Brownfield Projects in the Petroleum Industry • Key Differences Between Brownfield & Greenfield Projects • Challenges & Opportunities in Brownfield Development • Approach to Brownfield Asset Management</i>
0930 – 0945	Break
0945 – 1040	Brownfield Redevelopment Strategies <i>Life Extension of Existing Facilities • Capacity Enhancement & Debottlenecking Projects • Repurposing & Re-Engineering Old Assets • Case Studies on Successful Redevelopment</i>
1040 – 1135	Assessing Brownfield Assets & Infrastructure <i>Structural Integrity & Condition Assessment of Existing Facilities • Evaluating Operational Efficiency & Safety Compliance • Identifying Bottlenecks & Constraints in Brownfield Operations • Framework for Asset Evaluation</i>
1135 – 1230	Regulatory & Environmental Considerations <i>Compliance with Health, Safety, & Environmental (HSE) Policies • Environmental Impact Assessments (EIA) for Brownfield Projects • Permitting & Regulatory Approval Challenges • Best Practices for Minimizing Environmental Footprint</i>
1230 – 1245	Break



1245 – 1335	Project Management in Brownfield Development <i>Phases of Brownfield Project Execution • Risk Management in Project Planning • Coordination with Stakeholders & Regulatory Bodies • Project Management Methodologies</i>
1335 – 1420	Case Studies on Brownfield Development <i>Lessons Learned from Past Projects • Success Stories & Challenges Faced • Strategies to Overcome Operational Constraints • Future Trends in Brownfield Project Execution</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 One</i>

Day 2: Tuesday, 02nd of November 2026

0730 – 0830	Front-End Engineering Design (FEED) for Brownfield Projects <i>Importance of FEED in Brownfield Modifications • Scope Definition & Project Feasibility Studies • Risk Assessment & Safety Considerations • FEED Process for Brownfield Execution</i>
0830 – 0930	Integration of New Systems with Existing Facilities <i>Challenges in Retrofitting New Equipment • Compatibility with Existing Infrastructure & Operations • Ensuring Minimal Disruption During Integration • Strategies for Seamless System Integration</i>
0930 – 0945	<i>Break</i>
0945 – 1040	Structural & Mechanical Modifications <i>Upgrading Old Pipelines & Pressure Vessels • Reinforcing Aging Infrastructure • Replacement versus Rehabilitation of Mechanical Components • Approach to Brownfield Structural Improvements</i>
1040 – 1135	Electrical & Instrumentation Upgrades <i>Challenges in Upgrading Power & Control Systems • Selection of Automation & Digital Control Systems • Managing Legacy Systems in Brownfield Projects • Standards for Electrical Modifications</i>
1135 – 1230	Piping & Process Modifications <i>Debottlenecking & Optimization of Pipeline Networks • Impact of Flow Changes on Existing Equipment • Pipe Stress Analysis & Integrity Assessments • Best Practices for Process Piping Modifications</i>
1230 – 1245	<i>Break</i>
1245 – 1420	Case Studies on Engineering Challenges & Solutions <i>Real-World Examples of Engineering Design Failures & Solutions • Lessons Learned from Brownfield Upgrades • Value Engineering Strategies for Cost-Effective Development • Future Innovations in Brownfield Design & Engineering</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 Two</i>

Day 3: Wednesday, 03rd of November 2026

0730 – 0830	Planning & Scheduling for Brownfield Execution Work Breakdown Structure (WBS) for Brownfield Projects • Gantt Charts & Timeline Development • Key Performance Indicators (KPIs) for Project Execution • Project Scheduling Framework
0830 – 0930	Shutdown, Turnaround, & Tie-Ins Planning & Execution of Shutdown Activities • Challenges in Brownfield Tie-Ins & Hot Work Execution • Turnaround Best Practices for Minimal Downtime • Case Studies on Successful Tie-In Execution
0930 – 0945	Break
0945 – 1040	Managing Simultaneous Operations (SIMOPS) Risk Assessment & Coordination for SIMOPS • Conflict Resolution in Multiple Operational Activities • Ensuring Worker & Asset Safety During SIMOPS • Operational Procedures for Managing SIMOPS
1040 – 1135	Brownfield Construction & Site Challenges Working in Constrained & Live Operational Environments • Challenges in Material Handling & Logistics • Safety Measures for Brownfield Construction Activities • Construction Management Best Practices
1135 – 1230	Commissioning & Start-Up of Brownfield Projects Pre-Commissioning & Commissioning Best Practices • Functional Testing & Performance Validation • Startup & Operational Handover Processes • Commissioning Standards for Brownfield Projects
1230 – 1245	Break
1245 – 1420	Case Studies on Brownfield Construction Execution Analysis of Brownfield Project Delays & Solutions • Lessons Learned from Commissioning & Startup Failures • Cost-Effective Construction Strategies for Brownfield Sites • Future Trends in Brownfield Construction Techniques
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: Thursday, 04th of November 2026

0730 – 0930	Ensuring Operational Readiness in Brownfield Projects Training & Competency Development for Operations Staff • HSE & Process Safety Considerations in Operational Readiness • Documentation & Standard Operating Procedures (SOPs) • Framework for Operational Readiness Assessment
0930 – 0945	Break
0945 – 1100	Risk Management in Brownfield Development Identifying Key Risks in Brownfield Modifications • Quantitative & Qualitative Risk Assessment Methods • Risk Mitigation Strategies for Brownfield Execution • Best Practices in Project Risk Management
1100 – 1230	Asset Integrity Management in Brownfield Facilities Lifecycle Assessment of Aging Infrastructure • Corrosion Control & Preventive Maintenance • Integrity Monitoring & Predictive Analytics • Asset Integrity Management Standards
1230 – 1245	Break

1245 – 1330	Digitalization & Automation in Brownfield Execution <i>Digital Twin Applications in Brownfield Redevelopment • Real-Time Monitoring & Predictive Maintenance Solutions • AI & Machine Learning Applications in Brownfield Operations • Digital Transformation Strategies for Brownfield Projects</i>
1330 – 1420	Cost Management & Budgeting in Brownfield Projects <i>Budget Estimation & Cost Control Strategies • Financial Risks Associated with Brownfield Execution • Cost-Benefit Analysis for Modification versus Replacement • Cost Optimization Strategies for Brownfield Projects</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: Friday, 05th of November 2026

0730 – 0930	Case Studies on Operational Readiness & Risk Mitigation <i>Lessons Learned in Risk Management • Strategies for Improving Brownfield Project Efficiency • Future Trends in Asset Integrity & Automation • Best Practices in Operational Transition & Workforce Readiness</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Hands-On Training: Brownfield Project Planning <i>Developing a Brownfield Project Execution Plan • Work Breakdown Structure (WBS) & Timeline Development • Identifying Constraints & Mitigation Strategies • Project Planning Templates & Tools</i>
1100 – 1230	Practical Session: Brownfield Engineering & Design Modifications <i>Evaluating Structural & Mechanical Modifications • Integrating Process & Piping Changes • Designing Safety Enhancements for Brownfield Projects • Design Standards & Engineering Best Practices</i>
1230 – 1245	<i>Break</i>
1245 – 1345	Brownfield Execution Simulation & Troubleshooting <i>Managing Real-Time Project Execution Challenges • Problem-Solving for Construction & Tie-In Delays • Lessons Learned from Common Execution Pitfalls • Troubleshooting & Problem-Solving Framework</i>
1345 – 1400	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1400 – 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