COURSE OVERVIEW DE0452
Rig Component

Course Title
Rig Component

Course Date/Venue
Please refer to page number 5

Course Reference
DE0452

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 Rig Component. It covers the role and importance of rigs component and the key components of petrochemical rigs; the power generation systems including diesel engines, electric generators and hybrid systems; the types of drilling fluids including safety standards, environmental regulations and best practices; the hoisting system components, drill string components, top drive systems and pipe handling and racking systems; and the best practice for the maintenance and inspection of hosting components.

During this interactive course, participants will learn the mud pumps and systems and solid control systems including mud properties and management; the environmental management and the basic principles of fluid dynamics as applied to drilling fluid circulation in rigs; the well control, blowout preventers (BOPs), monitoring systems in rig and risk assessment in rig operations; the emergency response and contingency planning for well control incidents; the latest advancements in rig automation including robotic drilling systems; the advanced materials and sustainable practices in rig operations including energy efficiency and reduced environmental footprint

Course Objectives

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

- Apply and gain an in-depth knowledge on rig component
- Explain the role and importance of rigs component and the key components of petrochemical rigs
- Recognize power generation systems including diesel engines, electric generators and hybrid systems
- Identify the types of drilling fluids including safety standards, environmental regulations and best practices
- Recognize hoisting system components, drill string components, top drive systems and pipe handling and racking systems
- Employ best practice for the maintenance and inspection of hosting components
- Discuss mud pumps and systems and solid control systems including mud properties and management
- Apply environmental management through various techniques and technologies for handling waste produced by drilling fluids
- Describe the basic principles of fluid dynamics as applied to drilling fluid circulation in rigs
- Carryout well control, blowout preventers (BOPs), monitoring systems in rig and risk assessment in rig operations
- Employ emergency response and contingency planning for well control incidents
- Discuss the latest advancements in rig automation including robotic drilling systems
- Digitalize rig operations, identify advanced materials and apply sustainable practices in rig operations including energy efficiency and reduced environmental footprint

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 rig component for rig managers, drilling engineers, drilling supervisors, drilling technicians, safety officers, maintenance technicians, HSE (health, safety, and environment) personnel, operators and roustabouts, quality control inspectors and training coordinators.

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.

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.

Accommodation

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

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. Stan Constantino, MSc, BSc, is a **Senior Petroleum & Reservoir Engineer** with over **30 years** of **Offshore & Onshore** extensive experience within the **Oil, Gas & Petroleum** industries**.** His area of expertise include **Artificial Lift** Technology, **Fishing** Operations, **Drilling & Work-Over** Operations, Directional Drilling, **Drilling** Production & Operations, **Horizontal Wells**, **Well Surveillance**, **Well** Testing, Design & Analysis, **Well** Testing **& Oil Well Performance**, **Well Log** Interpretation, **Well Workover** Supervision, **Coiled Tubing** Operations & Interventions, **Coiled Tubing** Technology, **Cased Hole Logging**, Advanced Petrophysics/Interpretation of **Cased Hole Logs**, **Cased Hole Formation Evaluation**, **Cased Hole Formation** Evaluation, **Cased Hole Evaluation**, **Cased-Hole Logging**, Applied **Production Logging & Cased Hole & Production Log** Evaluation, **Cased Hole Logging & Formation** Evaluation, **Open Hole Logging** Methods, Open & Cased Hole Logging, **Wireline Logging**, **Mud Logging**, **Production Logging**, **Slick Line**, **Fractured Reservoir** Classification & Evaluation, Screening of Oil Reservoirs for **Enhanced Oil Recovery**, **Improved Oil Recovery**, **Enhanced Oil Recovery** Techniques, **Oil Reservoir** Evaluation & Estimation, **Reserves & Resources**, **Reserves Estimation** & **Uncertainty**, **Reserve** Evaluation, **Play Assessment & Prospect Evaluation**, **OIP Estimation & Range** of **Uncertainty**, **Reservoir** Characterization, **Water Flooding**, **Reservoir** Souring & Water Breakthrough, **Reservoir Performance** Using Classical Methods, **Fractured Reservoir** Evaluation & Management, **Reservoir Surveillance** & Management, **Reservoir Engineering** & Simulation, **Reservoir Monitoring**, **Pressure Transient** Testing & **Reservoir** Performance Evaluation, **Reservoir** Characterization, **Reservoir** Engineering Applications with ESP & Heavy Oil, **Reservoir** Volumetrics, Water Drive **Reservoir**, **Unconventional Resource & Reserves** Evaluation, **Oil & Gas Reserves** Estimation, **Petrophysics & Rock** Properties**, Seismic** Technology, Geological and Geophysical (**G&G**) Data Interpretation, **Geological** Modelling, **Water Saturation**, **Crude Oil & Natural Gas** Demand, **Exploration Agreements & Financial** Modelling, **Seismic Survey** Evaluation, **Exploration Well** Identification, **Field Production** Operation, **Field Development** & Production of Oil & Gas, **Field Development** Evaluation, Crude Oil Marketing, **Core & Log Data** Integration, **Core Logging**, Advanced **Core & Log Integration**, **Well Logs & Core Analysis**, Special Core Analysis (**SCAL**), **Petroleum Economic** Analysis, **Oil Industry** Orientation, **Oil Production & Refining**, **Crude Oil Market**, **Global Oil Supply & Demand**, **Global Oil Reserves**, **Crude Oil** Types & Specifications, **Oil Processing**, **Oil Transportation-Methods**, **Oil & Gas** Exploration and Methods, **Oil & Gas** Extraction, Technology Usage in Industrial Security; **Upstream**, **Midstream** & **Downstream Operations**; **Oil Supply & Demand**, **Oil Contracts**, **Government Legislation & Oil Contractual Agreements**, **Oil Projects** & Their Feasibility (revenue and profitability), Rock & Fluid Properties, Fluid Flow Mechanics, Fluid Properties and Phase Behavior (**PVT**), PVT Analysis, Material Balance, Darcy's Law & Applications, Radial Flow, **Gas Well** Testing, Natural Water Influx, EOR Methods, **Pressure Transient Analysis** and **Petrophysical Log Analysis**. Currently, he is the **CEO** & **Managing Director** of **Geo Resources Technology** wherein he is responsible in managing the services and providing technical supports to underground energy related projects concerning **field development**, **production**, **drilling**, **reservoir engineering** and **simulation**.

Throughout his long career life, Mr. Stan has worked for many international companies such as the **Kavala Oil**, **North Aegean Petroleum Company** and **Texaco Inc.**, as the **Managing Director**, **Operations Manager**, **Technical Trainer**, **Training Consultant**, **Petroleum Engineering & Exploration Department Head**, **Assistant Chief Petroleum Engineer**, **Reservoir Engineer, Resident Petroleum Engineer**, **Senior Petroleum Engineer** and **Petroleum Engineer** wherein he has been managing the evaluation of exploration wells, reservoir simulation, development training, production monitoring, wireline logging and well testing including selection and field application of well completion methods.

Mr. Stan has a **Master's** degree in **Petroleum Engineering** and a **Bachelor's** degree in **Geology** from the **New Mexico Institute of Mining & Technology** (**USA**) and from the **Aristotelian University** (**Greece**) respectively. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership of Management (ILM**) and a member of the Society of Petroleum Engineers, USA (**SPE**), Society of Well Log Professional Analysts, USA (**SPWLA**) and European Association of Petroleum Geoscientists & Engineers (**EAGE**). Moreover, Mr. Stan published numerous scientific and technical papers and delivered various trainings, courses and workshops worldwide.

Course Date/Venue

Session(s)	Date	Venue
1	April 12-16, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
2	April 13-17, 2026	Salon Expo, NH Hotel Plaza de Armas, Seville, Spain
3	June 22-26, 2026	Ruben Boardroom, The Rubens at The Palace, Buckingham Palace Road, London, United Kingdom
4	August 02-06, 2026	Pierre Lotti Meeting Room, Movenpick Hotel Istanbul Golden Horn, Istanbul, Turkey
5	September 20-24, 2026	Meeting Room 4, Four Seasons Hotel Cairo at Nile Plaza, Corniche El Nil, Garden City, Cairo, Egypt
6	October 04-08, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
7	December 13-17, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
8	January 18-22, 2027	Salon Expo, NH Hotel Plaza de Armas, Seville, Spain
9	March 22-26, 2027	Ruben Boardroom, The Rubens at The Palace, Buckingham Palace Road, London, United Kingdom

Course Fee

Doha	**US$ 8,500** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Seville	**US$ 8,800** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
London	**US$ 8,800** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Istanbul	**US$ 8,500** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Cairo	**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.
Dubai	**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 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 – 0900	***Overview of Petrochemical Rig Operations**: Introduction to the Role and Importance of Rigs in the Petrochemical Industry, Including Types of Rigs Used*
0900 - 0930	***Key Components of Petrochemical Rigs**: Detailed Breakdown of the Primary Components of a Rig such as Derricks, Masts, and Substructures*

0930 – 0945	Break
0945 – 1130	***Power Generation Systems***: Exploration of Power Sources Including Diesel Engines, Electric Generators, and Hybrid Systems Specifically Tailored for Petrochemical Applications
1130 – 1215	***Drilling Fluids in Petrochemical Applications***: Introduction to Types of Drilling Fluids Used and their Significance in the Petrochemical Industry
1215 – 1230	Break
1230 – 1330	***Safety Standards & Protocols***: Overview of Industry Safety Standards, Environmental Regulations, and Best Practices
1330 – 1420	***Interactive Session***: Discussion on the Integration of Rig Operations within Petrochemical Plants and Refineries
1420 – 1430	***Recap***
1430	Lunch & End of Day one

Day 2

0730 – 0830	***Hoisting System Components:*** In-depth Analysis of Components like the Crown Block, Traveling Block, and Hook, Focusing on Their Specific Uses in Petrochemical Operations
0830 - 0930	***Drill String Components:*** Detailed Exploration of Drill Pipes, Heavy-Weight Drill Pipes, Drill Collars, and Their Configurations
0930 – 0945	Break
0945 – 1100	***Top Drive Systems:*** Examination of the Advantages of Using Top Drive Systems Over Traditional Rotary Tables in Petrochemical Drilling Operations
1100 – 1215	***Pipe Handling & Racking Systems:*** Automation and Safety Features in Modern Pipe Handling Systems
1215 – 1230	Break
1230 – 1330	***Maintenance of Hoisting Equipment:*** Best Practices for the Maintenance and Inspection of Hoisting Components
1330 – 1420	***Case Studies***: Review of Specific Incidents or Challenges Faced in Petrochemical Rig Operations Related to Drilling and Hoisting
1420 – 1430	***Recap***
1430	Lunch & End of Day Two

Day 3

0730 – 0830	***Mud Pumps & Systems:*** Types of Mud Pumps Used, Their Operation, and Maintenance Specific to Petrochemical Applications
0830 - 0930	***Solid Control Systems***: Importance of Shale Shakers, Desanders, Desilters, and Centrifuges in Maintaining Drilling Fluid Integrity
0930 – 0945	Break
0945 – 1100	***Mud Properties & Management***: Detailed Discussion on the Properties of Drilling Muds, Including Viscosity, Density, and Chemical Composition Tailored for Petrochemical Drilling
1100 – 1215	***Environmental Management***: Techniques and Technologies for Handling Waste Produced by Drilling Fluids
1215 – 1230	Break
1230 – 1330	***Fluid Dynamics & Hydraulics***: Basic Principles of Fluid Dynamics as Applied to Drilling Fluid Circulation in Rigs

1330 – 1420	***Workshop**: Practical Exercises in Mixing and Testing Drilling Fluids with Different Chemical Properties.*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***Well Control:** Basics of Well Control, Including Understanding Pressures and Blowout Prevention*
0830 - 0930	***Blowout Preventers (BOPs):** Detailed Examination of BOP Types, Functions, and Maintenance Practices*
0930 – 0945	*Break*
0945 – 1100	***Monitoring Systems in Rigs**: Use of Sensors and Real-Time Monitoring Systems to Ensure Safe Operations in Petrochemical Settings*
1100 – 1215	***Risk Assessment in Rig Operations**: Techniques and Methodologies for Assessing and Managing Risks in Rig Operations*
1215 – 1230	*Break*
1230 – 1330	***Emergency Response & Contingency Planning:** Planning and Execution of Emergency Response Strategies for Well Control Incidents*
1330 – 1420	***Simulation Exercise:** Interactive Simulation of a Well Control Situation Using Virtual Technology*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0930	***Automation in Rig Components**: Discussion on the Latest Advancements in Rig Automation, Including Robotic Drilling Systems*
0930 – 0945	*Break*
0945 – 1100	***Digitalization of Rig Operations**: Impact of AI, and Machine Learning on Rig Monitoring and Operation*
1100 – 1230	***Advanced Materials & Equipment**: Innovations in Materials Science that Enhance the Durability and Efficiency of Rig Components*
1230 – 1245	*Break*
1245 – 1315	***Sustainability Practices**: Sustainable Practices in Rig Operations, Including Energy Efficiency and Reduced Environmental Footprint*
1315 - 1345	***Future Trends in Rig Technology:** Exploration of Upcoming Technologies and Their Potential Impact on the Petrochemical Industry*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

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

Course Coordinator

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