Drilling Rig Operation Training Course

Professional Development Training Course Outline

Category	General Training	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Drilling Rig Operation Training Course is a comprehensive, industry-aligned program designed to equip learners with advanced competencies in oil and gas drilling operations, rig safety systems, well control principles, and offshore/onshore drilling technologies. This course integrates modern upstream petroleum engineering practices, automated rig systems, HPHT drilling environments, and real-time drilling data monitoring to prepare participants for high-demand roles in global energy operations. With the increasing adoption of digital oilfield technology, smart drilling solutions, and AI-assisted rig performance optimization, the course ensures trainees are aligned with current and future industry standards.

Participants will gain in-depth exposure to drilling rig components, rotary systems, mud circulation systems, blowout prevention (BOP) protocols, and directional drilling operations. Emphasis is placed on safety-critical operations, risk mitigation strategies, and international drilling standards (API, IADC guidelines). The program blends theoretical foundations with immersive practical simulations, enabling learners to confidently operate in complex drilling environments while maintaining operational efficiency, environmental compliance, and workforce safety excellence.

Programme Curriculum

Drilling Rig Operation Training Course

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Course Duration

5 days

Course Objectives

1. Understand upstream oil & gas drilling lifecycle operations
2. Apply rig safety management systems (HSE & OSHA standards)
3. Operate and interpret blowout prevention (BOP) systems
4. Demonstrate knowledge of rotary drilling systems and hoisting equipment
5. Analyze drilling fluid properties and mud circulation control
6. Perform well control procedures using industry best practices (IADC certified methods)
7. Identify and troubleshoot drilling rig mechanical and hydraulic systems
8. Utilize digital drilling monitoring systems and real-time data analytics
9. Implement directional and horizontal drilling techniques
10. Manage kick detection and pressure control operations
11. Apply offshore rig safety protocols and emergency response systems
12. Understand HPHT (High Pressure High Temperature) drilling environments
13. Develop competency in automated rig operations and smart drilling technologies

Target Audience

1. Petroleum engineering students and graduates
2. Drilling engineers and assistant drillers
3. Rig floor workers and roughnecks
4. Oil and gas HSE safety officers
5. Offshore rig personnel and technicians
6. Energy sector technical trainees
7. Maintenance and mechanical engineers in drilling operations
8. Government energy inspectors and regulators

Course Modules

Module 1: Introduction to Drilling Rig Systems

- land rigs, offshore platforms, jack-up rigs
- Overview of drilling lifecycle operations
- Key rig components and functions
- Industry standards (API & IADC guidelines)
- Case Study: Deepwater Horizon operational failure analysis

Module 2: Drilling Fluids and Mud Engineering

- Mud properties and density control
- Circulation system design
- Cuttings transport mechanisms
- Mud contamination control
- Case Study: Lost circulation event in shale formations

Module 3: Blowout Prevention (BOP) Systems

- BOP stack configuration and operation
- Pressure control fundamentals
- Emergency shut-in procedures
- Testing and maintenance protocols
- Case Study: Kuwait oil well blowout containment response

Module 4: Well Control Operations

- Kick detection techniques
- Primary and secondary well control methods
- Shut-in procedures and calculations
- Well kill operations
- Case Study: Gulf of Mexico well control intervention

Module 5: Drilling Equipment & Rotary Systems

- Rotary table and top drive systems
- Drill string design and handling
- Hoisting and drawworks systems
- Torque and drag analysis
- Case Study: Drill string failure due to fatigue loading

Module 6: Directional & Horizontal Drilling

- Surveying and well trajectory control
- MWD/LWD technologies
- Geosteering principles
- Extended reach drilling operations
- Case Study: North Sea horizontal well optimization project

Module 7: Rig Safety & HSE Management

- Hazard identification and risk assessment (HIRA)
- Permit-to-work systems
- PPE standards and compliance
- Emergency response planning
- Case Study: Offshore evacuation drill effectiveness review

Module 8: Digital Drilling & Smart Oilfield Technologies

- Real-time drilling data analytics
- Automation in rig operations
- AI-based predictive maintenance
- Remote monitoring systems

- Case Study: Smart rig implementation in Middle East oilfields

Training Methodology

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com