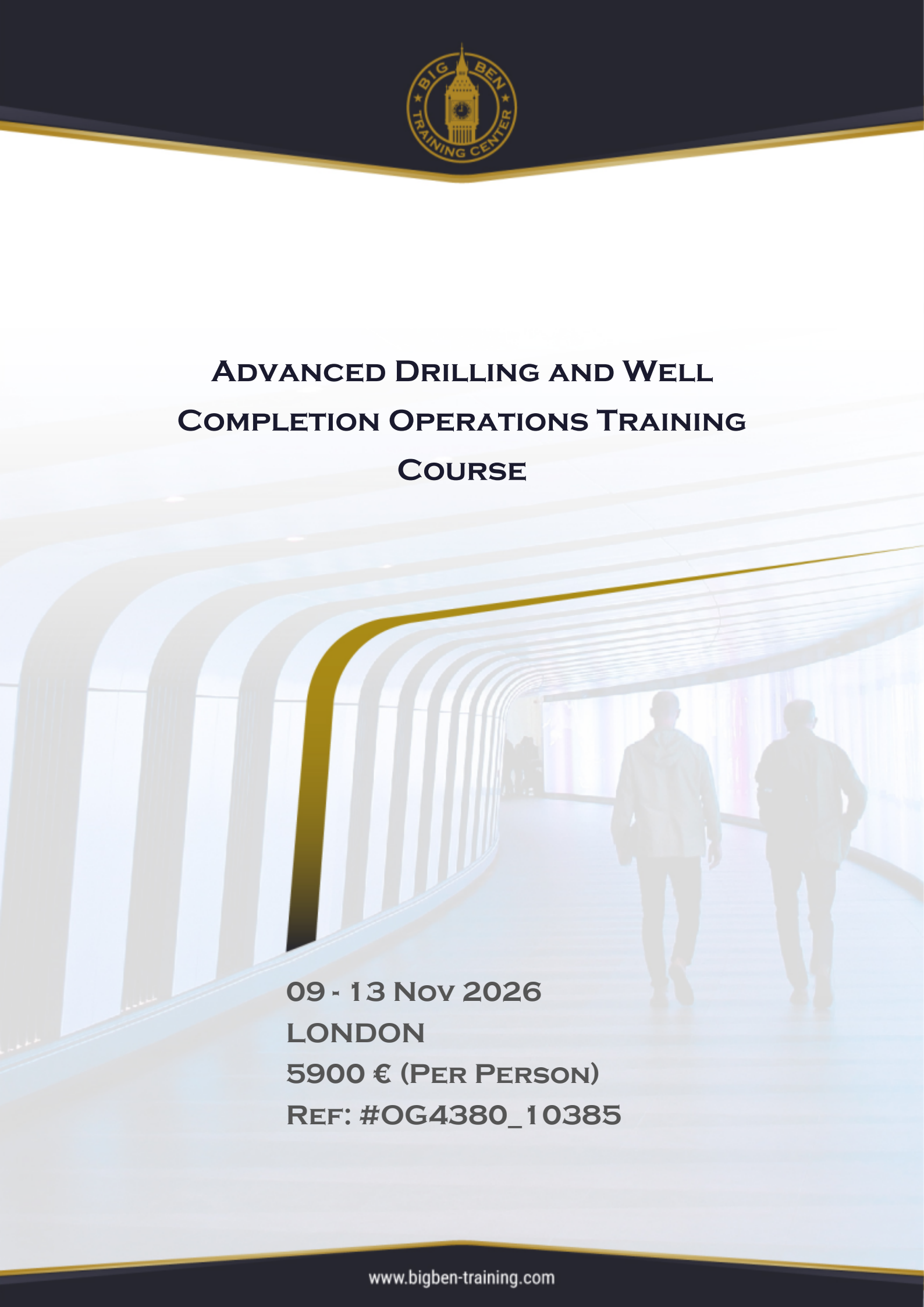
Advanced Drilling and Well Completion Operations Training Course



09 - 13 Nov 2026

LONDON

5900 € (Per Person)

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Course Introduction / Overview:

Drilling and well completion are critical operations at the heart of the petroleum industry, directly impacting the safety, cost, and productivity of hydrocarbon extraction. As industry pushes into more challenging environments, from Deepwater to unconventional reservoirs, the need for advanced technical skills is greater than ever. This comprehensive training course, provided by BIG BEN Training Center, is designed to give professionals a deep understanding of modern drilling and well completion techniques. We cover the entire lifecycle, from the initial well planning and rig selection to complex operations like directional drilling, hydraulic fracturing, and well intervention. The curriculum incorporates insights from leading academic authors, such as Dr. Robert F. Mitchell and his book, Petroleum Engineering Handbook: Volume II - Drilling Engineering. By blending theoretical knowledge with real-world case studies, this program equips participants with the expertise to optimize drilling programs, enhance well performance, and ensure operational safety and efficiency in any environment.

Target Audience / This training course is suitable for:

- Drilling and completions engineers.
- Petroleum and reservoir engineers.
- Wellsite supervisors.
- Operations and project managers.
- Drilling fluid specialists.
- Geologists and geophysicists.
- HSE professionals.

Target Sectors and Industries:

- Upstream oil and gas exploration and production.
- Drilling services and equipment manufacturing.
- Oilfield service companies.
- Petrochemicals and chemicals.
- Government agencies and regulatory bodies.
- Consulting firms specializing in oil and gas.
- Research and development institutions.

Target Organizations Departments:

- Drilling and completions.
- Reservoir engineering.
- Operations and production.
- Health, safety, and environment (HSE).
- Project management.
- Geosciences.
- Research and development.

Course Offerings:

By the end of this course, the participants will have able to:

- Design a comprehensive drilling program for a specific well.
- Select the appropriate drilling fluid and casing program.
- Master the principles of directional and horizontal drilling.
- Apply advanced completion techniques.
- Understand the process of hydraulic fracturing.
- Identify and mitigate drilling risks and well control issues.
- Evaluate well productivity and design an intervention strategy.

Course Methodology:

This training course uses a hands-on, problem-based learning methodology to ensure that participants gain practical skills in drilling and well completion. Our approach combines expert-led presentations with interactive workshops and detailed case studies of real-world drilling projects. Participants will engage in exercises that simulate key decisions in the drilling process, from selecting the right bit to managing a well-controlled incident. The course uses 3D visualizations and technical schematics to illustrate complex downhole operations and equipment. We will analyze case studies of challenging wells to understand the strategies used to overcome problems such as high pressure, unstable formations, and Deepwater logistics. Group-based activities will foster a collaborative environment where participants can share their experiences and troubleshoot complex scenarios. BIG BEN Training Center is committed to providing a high-quality learning experience that is directly applicable to the daily work of professionals in this specialized field.

Course Agenda (Course Units):

Unit One: Drilling Engineering Fundamentals the Well Design.

- Well planning and design.
- Drilling fluids and their properties.
- Drilling bits and bottom hole assemblies (BHA).
- Casing and cementing programs.
- Drilling rig types and selection.
- Pressure control and wellbore stability.
- Well control procedures.

Unit Two: Directional and Horizontal Drilling the Subsurface Path.

- Principles of directional drilling.
- Steering tools and measurement-while-drilling (MWD).
- Horizontal and extended-reach drilling.
- Multilateral and sidetrack operations.
- Gesturing and reservoir navigation.
- Surveying techniques.
- Advanced drilling case studies.

Unit Three: Well Completions Bringing the Hydrocarbons to Surface.

- Types of well completions.
- Casing and tubing design.
- Downhole equipment and packers.
- Perforation and stimulation.
- Sand control methods.
- Smart well completions.
- Flow control and artificial lift.

Unit Four: Well Intervention and Workover Maintaining Production.

- Introduction to well intervention.
- Wireline and coiled tubing operations.
- Workover rig operations.
- Diagnosing wellbore issues.
- Remedial cementing and fishing operations.
- Hydraulic fracturing and acidizing.
- Production enhancement techniques.

Unit Five: Risk, Safety, and Technology the Modern Oilfield.

- Drilling and completions risk management.
- Well-site safety and environmental considerations.
- Integrated operations and digital technologies.
- Drilling automation.
- Real-time data for decision making.
- New technologies in drilling and completions.
- The future of drilling and completions.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each day session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

As the industry increasingly moves toward automation and remote operations, how will the roles of drilling and completions engineers evolve, and what new skill sets will be required to manage these advanced technologies?

What unique qualities does this course offer compared to other courses?

This training course is unique because it provides a comprehensive, end-to-end perspective on the entire drilling and well completion lifecycle. Unlike more general courses, our curriculum goes beyond the basics to cover advanced techniques like directional drilling, hydraulic fracturing, and smart completions. Our hands-on methodology, which uses detailed case studies and 3D visualizations, provides a practical understanding of how to apply these complex concepts in the field. We also focus on the critical aspects of risk management and the integration of new digital technologies, which are essential for modern operations. This program provides participants with a high-level, technical skill set that is immediately applicable to their roles. It is an investment in professional development that can lead to significant improvements in operational efficiency and safety.