



DRILLING, WELLS AND RESERVOIR ENGINEERING

Managed Pressure and Underbalanced Drilling

5 day course

Classroom, online or in-house

Course overview

Some wells cannot be drilled conventionally because the window between pore pressure and fracture pressure is narrower than the swing in bottomhole pressure each time the pumps stop. Managed pressure drilling closes that gap with a rotating control device and an automated choke. Delegates compare constant bottomhole pressure, pressurised mud cap and dual gradient variants, then the hardware: RCDs, choke manifolds, Coriolis flowmeters and backpressure pumps. Hydraulic modelling, connection procedures and the MPD operations matrix that separates influx management from well control are worked through. Underbalanced drilling follows, with nitrogen and aerated systems, multiphase flow, reservoir benefits and surface separation. Delegates leave able to judge when MPD or UBD suits a well and plan its execution.

What you will learn

- Explain why narrow pressure windows defeat conventional drilling
- Compare constant bottomhole pressure, mud cap and dual gradient techniques
- Specify rotating control devices, chokes and flowmeters for an MPD system
- Model annular pressure profiles during drilling and connections
- Apply an MPD operations matrix to distinguish influx management from well control
- Design underbalanced operations using gasified or aerated fluids
- Evaluate reservoir and drilling benefits of underbalanced operation
- Plan surface separation and handling of produced fluids while drilling

Who should attend

- Drilling engineers working on narrow margin wells
- MPD and UBD service engineers
- Drilling supervisors on MPD equipped rigs
- Well control specialists
- Reservoir engineers assessing underbalanced benefits

Course outline

- 01 Narrow margin wells and the case for closed loop drilling
- 02 MPD variants and their applications
- 03 Rotating control devices and automated chokes
- 04 Hydraulic modelling and connection management
- 05 The operations matrix and influx response
- 06 Pressurised mud cap drilling for severe losses
- 07 Underbalanced drilling principles
- 08 Gasified systems and multiphase flow
- 09 Surface separation and safety

Upcoming dates

Dates	Venue	Format	Fee per delegate
19 to 23 October 2026	Johannesburg, South Africa	Classroom	R19,950
28 December 2026 to 1 January 2027	Online	Online	R8,500
4 to 8 January 2027	Accra, Ghana	Classroom	USD 1,325



Fees and how to register

This 5 day course is **R8,500** per delegate online, **R19,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 1,325** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afriscience.co.za, or WhatsApp us on **+27 63 479 1136**.

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