



DRILLING, WELLS AND RESERVOIR ENGINEERING

Production Optimisation and Nodal Analysis

5 day course

Classroom, online or in-house

Course overview

A well producing well below its potential rarely raises an alarm; it simply settles into a lower rate that everyone accepts as normal. Nodal analysis exposes that gap. Delegates build inflow performance relationships using productivity index, Vogel and composite models, then vertical lift performance from multiphase flow correlations, and intersect the two to locate the operating point. Sensitivities on tubing size, wellhead pressure, skin, water cut and gas oil ratio show where effort pays. Choke performance, flowline and gathering network constraints and calibration of models against production tests follow. The later sessions turn the method into a surveillance routine: exception based monitoring, ranking optimisation opportunities and building the business case for each. Delegates leave able to model a well and recover deferred production.

What you will learn

- Construct inflow performance relationships for oil and gas wells
- Generate vertical lift performance curves with multiphase flow correlations
- Determine the operating point from the inflow and outflow intersection
- Run sensitivities on tubing size, skin, wellhead pressure and water cut
- Calculate choke performance for critical and subcritical flow
- Assess back pressure from flowlines and gathering networks
- Calibrate well models against production test data
- Rank optimisation opportunities and justify them economically

Who should attend

- Production engineers and production technologists
- Petroleum engineers responsible for well performance
- Production surveillance analysts
- Field and asset engineers in mature fields
- Facilities engineers dealing with network constraints

Course outline

- 01 The production system and pressure losses
- 02 Inflow performance relationships
- 03 Skin, damage and inflow sensitivity
- 04 Multiphase flow and vertical lift performance
- 05 Finding the operating point
- 06 Chokes, flowlines and network back pressure
- 07 Model calibration with production tests
- 08 Surveillance and exception based monitoring
- 09 Opportunity ranking and economics

Upcoming dates

Dates	Venue	Format	Fee per delegate
7 to 11 December 2026	Online	Online	R8,500
28 December 2026 to 1 January 2027	Lusaka, Zambia	Classroom	USD 1,325
15 to 19 February 2027	Windhoek, Namibia	Classroom	R19,950



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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