



PETROLEUM GEOSCIENCE AND PETROPHYSICS

Petroleum Systems and Hydrocarbon Exploration

5 day course

Classroom, online or in-house

Course overview

Most dry holes fail on a single element: a source rock that never matured, a seal that leaked or a trap that formed after the oil had already moved on. Explorers who assess each element on its own merits drill fewer of them. Delegates work through source rock geochemistry, kerogen types and maturity indicators such as vitrinite reflectance and Tmax, then through expulsion, migration pathways and the timing of charge relative to trap formation. Reservoir and seal effectiveness are assessed next, followed by play fairway mapping and common risk segment maps. The final sessions cover prospect generation, chance of success estimation and volumetric ranges, using worked examples from African rift, passive margin and delta settings. Delegates leave able to build a petroleum system event chart, risk a prospect element by element and defend a ranked portfolio.

What you will learn

- Evaluate source rock richness, kerogen type and thermal maturity from geochemical data
- Construct a petroleum system event chart linking generation, migration and trap timing
- Assess reservoir and seal effectiveness at play and prospect scale
- Map play fairways and common risk segments across a basin
- Estimate geological chance of success for each risk element
- Calculate probabilistic in place and recoverable volume ranges for a prospect
- Rank prospects and leads into a defensible exploration portfolio
- Identify play types characteristic of African rift and passive margin basins

Who should attend

- Exploration geologists and geophysicists
- Prospect and play evaluation specialists
- New venture and portfolio analysts
- Petroleum agency technical staff assessing licence rounds
- Geochemists moving into integrated exploration roles

Course outline

- 01 Elements and processes of a petroleum system
- 02 Source rock geochemistry and maturity
- 03 Expulsion, migration and charge timing
- 04 Reservoir and seal effectiveness
- 05 Play fairway and common risk segment mapping
- 06 Prospect generation and lead inventories
- 07 Chance of success and risk dependencies
- 08 Probabilistic volumetrics
- 09 Portfolio ranking and exploration strategy

Upcoming dates



Dates	Venue	Format	Fee per delegate
9 to 13 November 2026	Maseru, Lesotho	Classroom	R19,950
7 to 11 December 2026	Addis Ababa, Ethiopia	Classroom	USD 1,325
14 to 18 December 2026	Gaborone, Botswana	Classroom	R19,950
4 to 8 January 2027	Online	Online	R8,500

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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