



LABORATORY EXCELLENCE, SAFETY AND ACCREDITATION

HPLC and GC Operation and Method Troubleshooting

3 day course

Classroom, online or in-house

Course overview

Chromatography problems are diagnosed badly because the symptom appears at the detector while the cause is usually upstream, and analysts replace columns that were never at fault. This course teaches the diagnosis. Delegates work through the separation itself and what each parameter changes, the flow path from injector to detector, and where sample, mobile phase and hardware each contribute. Column chemistry and selection follow. Method development and the sequence of changes that converges on a separation are covered. Common failures are worked through systematically: peak tailing, splitting, ghost peaks, retention drift, baseline noise and pressure changes, each traced to cause. Detector specifics for both techniques are addressed. System suitability and what it proves are covered. The course closes on preventive maintenance for the instrument and on documenting a troubleshooting investigation.

What you will learn

- Explain what each separation parameter changes
- Trace the flow path from injector to detector
- Select columns by chemistry rather than by habit
- Develop a method through a converging sequence of changes
- Diagnose tailing, splitting, ghost peaks and retention drift
- Resolve baseline noise, pressure changes and detector faults
- Run system suitability and document an investigation

Who should attend

- Chromatography analysts in pharmaceutical and environmental laboratories
- Instrument operators transitioning from wet chemistry to chromatography
- Method development and validation scientists
- Laboratory supervisors overseeing chromatographic testing

Course outline

- 01 The symptom is at the detector
- 02 Separation parameters and their effect
- 03 The flow path end to end
- 04 Column chemistry and selection
- 05 Method development sequence
- 06 Peak shape and ghost peak faults
- 07 Retention drift, baseline and pressure
- 08 Detectors, system suitability and maintenance

Upcoming dates

Dates	Venue	Format	Fee per delegate
5 to 7 October 2026	Online	Online	R6,500
4 to 6 November 2026	Maseru, Lesotho	Classroom	R14,950
1 to 3 March 2027	Cape Town, South Africa	Classroom	R14,950



Fees and how to register

This 3 day course is **R6,500** per delegate online, **R14,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 995** 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**.

AfriScience Group | +27 61 536 6531 | info@afriscience.co.za | Pretoria, Gauteng, South Africa