



LABORATORY EXCELLENCE, SAFETY AND ACCREDITATION

Inductively Coupled Plasma Techniques

5 day course

Classroom, online or in-house

Course overview

Plasma based techniques deliver multi element determination at low detection limits, which makes them the standard for environmental, geological and metallurgical work where many elements matter at once. This course covers operating them. Delegates work through plasma generation and the instrument's components, the choice between optical emission and mass spectrometric detection and what each is best at, and calibration including internal standardisation. Interferences receive detailed treatment, particularly the polyatomic and isobaric interferences that affect mass spectrometric detection and the collision and reaction cell techniques used against them. Sample introduction, digestion and dissolved solids limits complete the programme.

What you will learn

- Explain plasma generation and the instrument's components
- Choose between optical emission and mass spectrometric detection
- Calibrate with internal standardisation and verify performance
- Identify spectral, polyatomic and isobaric interferences
- Apply collision and reaction cell techniques appropriately
- Prepare, digest and introduce samples within dissolved solids limits
- Troubleshoot sensitivity loss, drift and matrix suppression

Who should attend

- Analytical chemists and senior laboratory analysts
- Environmental and water laboratory staff
- Geochemical and metallurgical laboratory personnel
- Method development scientists
- Laboratory technical managers

Course outline

- 01 Plasma generation and instrument components
- 02 Optical emission against mass spectrometric detection
- 03 Calibration and internal standardisation
- 04 Spectral interferences
- 05 Polyatomic and isobaric interferences
- 06 Collision and reaction cell techniques
- 07 Sample introduction and dissolved solids limits
- 08 Digestion, troubleshooting and matrix suppression

Upcoming dates

Dates	Venue	Format	Fee per delegate
28 September to 2 October 2026	Online	Online	R8,500
2 to 6 November 2026	Johannesburg, South Africa	Classroom	R19,950
1 to 5 March 2027	Cape Town, South Africa	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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