



MINING AND MINERALS TRAINING

Sampling, Assay Quality Assurance and Umpire Testing

3 day course

Classroom, online or in-house

Course overview

Every tonne bought, sold, reconciled or reported rests on a sample weighing a few hundred grams, and a sampling error cannot be corrected by any amount of care in the laboratory afterwards. This course starts at the sample. Delegates work through sampling theory in usable terms: the fundamental error, correct sample mass for a given particle size, and why a scoop off a stockpile is not a sample. Sampling systems are covered for stopped belt, cross belt and cross stream cutters, including cutter geometry and the bias each design can introduce. Sample preparation follows, covering crushing, splitting and pulverising, and contamination between samples. Assay methods are addressed at a level that lets a non chemist question a result. Quality assurance is covered properly: certified reference materials, blanks, duplicates and the control charts that reveal drift. Umpire assay and dispute resolution in commercial contracts are addressed. The course closes on bias testing and on investigating a reconciliation gap.

What you will learn

- Apply sampling theory to determine correct sample mass
- Recognise why unrepresentative sampling cannot be corrected later
- Assess cutter geometry and bias in mechanical sampling systems
- Prepare samples without contamination between them
- Question an assay result as an informed non chemist
- Run reference materials, blanks and duplicates on control charts
- Handle umpire assay disputes and investigate a reconciliation gap

Who should attend

- Metallurgical accountants and reconciliation staff
- Samplers and sample preparation technicians
- Laboratory quality assurance officers
- Commercial staff managing concentrate contracts
- Grade control and resource geologists

Course outline

- 01 A few hundred grams decides everything
- 02 Sampling theory and fundamental error
- 03 Correct sample mass for particle size
- 04 Stopped belt, cross belt and cross stream cutters
- 05 Cutter geometry and bias
- 06 Preparation, splitting and contamination
- 07 Reference materials, blanks and duplicates
- 08 Control charts, umpire assay and reconciliation gaps

Upcoming dates

Dates	Venue	Format	Fee per delegate
7 to 9 October 2026	Durban, South Africa	Classroom	R14,950
20 to 22 January 2027	Online	Online	R6,500
10 to 12 March 2027	Port Louis, Mauritius	Classroom	USD 995



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**.

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