



MINING AND MINERALS TRAINING

Geotechnical Instrumentation and Slope Monitoring

3 day course

Classroom, online or in-house

Course overview

A slope gives warning before it fails, and the failures that kill people are the ones where the warning was being recorded and nobody had agreed in advance what reading would stop the operation. This course closes that gap. Delegates work through failure mechanisms and the deformation signature each produces, so that a monitoring system is designed around what is actually expected. Instrument types are covered: prisms and robotic total stations, radar, satellite interferometry, extensometers, piezometers and inclinometers, with the coverage, precision and blind spots of each. Installation and survival in a working pit are addressed, since an instrument destroyed by a blast measures nothing. Data management and alarm thresholds follow, including inverse velocity analysis and the interpretation of accelerating movement. Trigger action response plans are covered as the core deliverable: who is told, who decides and who clears the area. Communication under uncertainty is addressed. The course closes on back analysis after a failure and on system audit.

What you will learn

- Design monitoring around the failure mechanism expected
- Select instruments for coverage, precision and blind spots
- Install instrumentation that survives a working environment
- Manage data and set alarm thresholds
- Interpret accelerating movement and inverse velocity
- Build a trigger action response plan with named decision makers
- Communicate under uncertainty and back analyse after a failure

Who should attend

- Geotechnical engineers and technicians
- Mine surveyors supporting slope monitoring
- Open pit production supervisors
- Safety officers responsible for ground control
- Mine managers accountable for slope risk

Course outline

- 01 Recorded warnings nobody acted on
- 02 Failure mechanisms and deformation signatures
- 03 Prisms, radar and satellite interferometry
- 04 Extensometers, piezometers and inclinometers
- 05 Installation and instrument survival
- 06 Data management and alarm thresholds
- 07 Inverse velocity and accelerating movement
- 08 Trigger action response plans, communication and back analysis

Upcoming dates

Dates	Venue	Format	Fee per delegate
23 to 25 December 2026	Kampala, Uganda	Classroom	USD 995
18 to 20 January 2027	Windhoek, Namibia	Classroom	R14,950
3 to 5 March 2027	Online	Online	R6,500



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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