



MINING AND MINERALS TRAINING

Open Pit Design, Optimisation and Slope Stability

5 day course

Classroom, online or in-house

Course overview

An open pit is designed to the steepest wall the rock will hold, because every degree of slope angle moves a large quantity of waste and a large amount of money. This course covers designing and holding that wall. Delegates work through pit optimisation and the shell that maximises value, phase and pushback design, and haul road and ramp geometry. Slope stability takes the second half: geotechnical data collection, failure mechanisms in rock and soil slopes, stability analysis and the acceptance criteria applied. Monitoring, radar and trigger action response plans are covered, along with managing a wall that has started to move. The course closes on reconciling design against what was actually mined.

What you will learn

- Run pit optimisation and interpret the resulting shell
- Design phases, pushbacks and haul road geometry
- Collect and interpret the geotechnical data slope design requires
- Identify failure mechanisms in rock and soil slopes
- Carry out stability analysis against defined acceptance criteria
- Operate slope monitoring and trigger action response plans
- Manage a wall that has begun to move, and reconcile design against actual

Who should attend

- Open pit mining engineers and planners
- Geotechnical engineers and engineering geologists
- Mine surveyors and technical services staff
- Production and pit superintendents
- Consultants advising on open pit operations

Course outline

- 01 Slope angle as the largest cost lever
- 02 Pit optimisation and the value shell
- 03 Phase and pushback design
- 04 Haul roads and ramp geometry
- 05 Geotechnical data collection
- 06 Failure mechanisms and stability analysis
- 07 Monitoring, radar and trigger action response
- 08 Managing wall movement and reconciling design

Upcoming dates

Dates	Venue	Format	Fee per delegate
19 to 23 October 2026	Online	Online	R8,500
16 to 20 November 2026	Nairobi, Kenya	Classroom	USD 1,325
11 to 15 January 2027	Dar es Salaam, Tanzania	Classroom	USD 1,325

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**.

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