



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

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COURSE BROCHURE

Rock Strength Stress And Fracturing Fundamentals Training

Manufacturing, Engineering and Technology / Fabrication and Extraction

Unit Standard 115739 · NQF Level 4 · 3 Credits · 1 Day

COURSE OVERVIEW

This course provides a comprehensive understanding of rock strength, stress, and fracturing principles essential for safe and efficient mining and geotechnical operations. Participants will learn to assess rock mass behavior under various stress conditions and apply fracture mechanics to mitigate hazards in underground and surface excavations.

Category	Manufacturing, Engineering and Technology
Subfield	Fabrication and Extraction
Unit Standard	115739
Accreditation	SAQA Accredited · NQF Level 4 · 3 Credits
Duration	1 day
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply fundamental concepts of rock strength and stress analysis to evaluate rock mass stability.
- Analyze stress distribution around excavations using appropriate theoretical and empirical methods.
- Evaluate fracture initiation and propagation in rock under different loading conditions.
- Design support systems to control fracturing and maintain excavation integrity.
- Demonstrate the use of field and laboratory testing methods to determine rock strength parameters.
- Implement risk assessment procedures for rock failure and ground control hazards.

WHO SHOULD ATTEND

- This course is designed for mining engineers, geotechnical engineers, geologists, rock mechanics practitioners, and safety professionals involved in the design and operation of excavations in rock.

COURSE OUTLINE

Day 1: Rock Strength, Stress, and Fracturing Fundamentals

- Introduction to rock mechanics and its importance in South African mining.
- Concepts of stress and strain in rock masses.
- Rock strength parameters: compressive, tensile, and shear strength.
- Modes of rock fracturing: tensile, shear, and compressive failure.
- Factors influencing rock strength: confining pressure, water content, and anisotropy.
- Overview of common failure criteria (Mohr-Coulomb, Hoek-Brown).
- Practical applications: rockbursts, pillar design, and tunnel stability.
- Case studies from South African deep-level gold and platinum mines.

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **3 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 12,800.00	R 12,800.00
1	In-House	R 16,600.00	R 16,600.00
1	On-Campus (Pretoria)	R 19,200.00	R 19,200.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	10 Aug 2026	On-Campus	Dubai, UAE
11 Aug 2026	11 Aug 2026	On-Campus	Pretoria, South Africa
12 Aug 2026	12 Aug 2026	On-Campus	Abu Dhabi, UAE
13 Aug 2026	13 Aug 2026	On-Campus	Durban, South Africa
13 Aug 2026	13 Aug 2026	On-Campus	Mauritius
14 Aug 2026	14 Aug 2026	On-Campus	Cape Town, South Africa
17 Aug 2026	17 Aug 2026	On-Campus	Pretoria, South Africa
18 Aug 2026	18 Aug 2026	On-Campus	Abu Dhabi, UAE

Contact us if no suitable date is listed – on-demand sessions can be arranged for groups.

HOW TO GET A QUOTE OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 115739) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za – our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call +27 12 004 8389 or WhatsApp +27 65 077 6310 and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

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