Accredited Africa Training Institute for Capacity Development
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COURSE BROCHURE

Dragline Operation Skills For Mining And Construction Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 116130 · NQF Level 2 · 24 Credits · 21 Days

COURSE OVERVIEW

This course equips learners with the essential skills and knowledge required to operate a dragline safely and efficiently in mining and construction environments. It covers pre-operational checks, operational techniques, and shutdown procedures, ensuring compliance with industry regulations and promoting a culture of safety.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	116130
Accreditation	SAQA Accredited · NQF Level 2 · 24 Credits
Duration	21 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS — verifiable online

LEARNING OUTCOMES

- Demonstrate the ability to conduct pre-operational inspections and identify potential hazards associated with dragline operation.
- Apply correct startup, maneuvering, and shutdown procedures for a dragline in accordance with manufacturer specifications and site protocols.
- Analyze operational conditions to optimize dragline performance while maintaining safety standards.
- Implement appropriate communication and signaling techniques during dragline operations.
- Evaluate risks and apply emergency procedures in the event of equipment malfunction or unsafe conditions.

WHO SHOULD ATTEND

- This course is designed for aspiring and current dragline operators, as well as supervisors and safety officers in the mining and construction sectors who require formal training in dragline operation.

COURSE OUTLINE

Day 1: Introduction to Dragline Operations and Safety

- Overview of dragline applications in South African mining and construction.
- Legal framework: Mine Health and Safety Act, site-specific safety rules.
- Personal protective equipment (PPE) requirements.
- Major dragline components: boom, bucket, hoist and drag ropes, walking mechanism.
- Pre-start inspection procedures.
- Hazard identification and risk assessment basics.

Day 2: Dragline Controls and Instrumentation

- Control layout: swing, hoist, drag, and travel controls.
- Instrument panel: engine temperature, oil pressure, fuel level, voltmeter.
- Warning systems: alarms and indicators.
- Basic electrical circuits and hydraulic components.
- Engine start-up and shutdown procedures.
- Emergency stop and isolation procedures.

Day 3: Pre-Operational Checks and Daily Maintenance

- Walk-around inspection checklist.
- Checking fluid levels: engine oil, coolant, hydraulic oil, fuel.
- Inspecting ropes, sheaves, and bucket attachments.
- Lubrication points and grease types.
- Tire and track inspection for walking draglines.
- Filling out pre-shift logs and defect reports.

Day 4: Fundamentals of Dragline Operations – Digging Cycle

- Phases of the digging cycle.
- Bucket positioning and penetration.
- Hoist and drag coordination for efficient filling.
- Digging depth and angle optimization.
- Avoiding overloading and rope damage.
- Practice simulations on basic cycle.

Day 5: Machine Positioning and Travel Operations

- Travel controls and steering.
- Walking dragline: cam and eccentric mechanism.
- Ground conditions and bearing capacity.
- Positioning for bench height and reach.
- Travel on gradients and uneven terrain.
- Safety during travel: clear area, signals.

Day 6: Swing and Dump Operations

- Swing brake and clutch operation.
- Swing acceleration and deceleration.
- Timing the dump: hoist release and bucket angle.
- Dumping into trucks, hoppers, or stockpiles.
- Reducing swing cycle time.

- Practice exercises on swing and dump.

Day 7: Advanced Digging Techniques

- Slot digging versus side casting.
- Digging in rock, clay, and sand.
- Using drag and hoist to break hard material.
- Managing bucket overfill and spillage.
- Adapting to material changes.
- Efficiency tips from experienced operators.

Day 8: Loading and Haulage Integration

- Truck spotting and loading zones.
- Swing path planning to minimize truck wait time.
- Even loading: centre of gravity and load distribution.
- Hand signals and radio communication.
- Loading oversize material and spillage management.
- Safety around mobile equipment.

Day 9: Bench and Slope Management

- Bench height, width, and slope design.
- Digging to grade using reference points.
- Identifying unstable ground.
- Scaling loose material.
- Benching for multiple lifts.
- Legal requirements for bench dimensions.

Day 10: Water Management and Soft Ground Operations

- Digging sumps and channels.
- Operating on soft or saturated ground.
- Using mats or cribbing.
- Drainage planning and water diversion.
- Risk of sinkholes and collapse.
- Maintenance of walking mechanism in mud.

Day 11: Night Operations and Low Visibility

- Lighting requirements: machine lights, floodlights.
- Depth perception challenges at night.
- Using reflective markers and warning lights.
- Radio protocols for low visibility.
- Fatigue management during night shifts.
- Emergency procedures in darkness.

Day 12: Emergency Procedures and Breakdown Response

- Fire types and extinguisher use.
- Hoist/drag rope break response.
- Hydraulic leak and burst hose procedures.
- Electrical fault isolation.
- Emergency shutdown drills.
- Reporting and logging incidents.

Day 13: Environmental Compliance and Rehabilitation

- Environmental management plan (EMP).
- Dust suppression techniques.
- Noise control measures.
- Spill containment and clean-up.
- Topsoil stripping and stockpiling.
- Recontouring and revegetation basics.

Day 14: Productivity and Cycle Time Optimization

- Cycle time components: dig, hoist, swing, dump, return.
- Time studies and recording methods.
- Factors affecting productivity: operator skill, machine condition, material.
- Reducing idle time and delays.
- Benchmarking against targets.
- Implementing best practices.

Day 15: Communication and Teamwork

- Standard hand signals for dragline operations.
- Two-way radio etiquette and channels.
- Coordinating with dozers, graders, and drills.
- Pre-shift meetings and toolbox talks.
- Reporting hazards and near misses.
- Building a safety culture.

Day 16: Maintenance Awareness and Troubleshooting

- Wear indicators on ropes, pins, and bushings.
- Adjusting brake and clutch clearances.
- Changing filters and fluids.
- Diagnosing common faults: overheating, low pressure.
- Preventive maintenance tasks.
- Work order system and parts requisition.

Day 17: Advanced Terrain and Special Operations

- Operating on slopes: stability and counterbalance.
- Breaking and removing oversize rocks.
- Trench digging for pipelines or foundations.
- Working near edges and highwalls.
- Confined space considerations.
- Use of bucket attachments.

Day 18: Simulator-Based Scenario Training

- Simulator familiarisation.
- Scenario 1: Standard digging cycle.
- Scenario 2: Loading trucks.
- Scenario 3: Night operation.
- Scenario 4: Equipment failure.
- Performance review and coaching.

Day 19: Assessment Preparation and Review

- Recap of key topics from Days 1-18.
- Mock practical assessment.
- Written test preparation.
- Q&A; session with instructor.
- Final safety briefing.
- Individual feedback and study tips.

Day 20: **Final Assessment and Certification**

- Practical assessment: pre-start, digging cycle, loading, travel.
- Written test on theory, safety, and regulations.
- Evaluation of communication and teamwork.
- Results review with assessor.
- Issue of certificate of competence.
- Career development guidance.

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 **24 NQF credits** at **NQF Level 2**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 64,000.00	**R 64,000.00**
1	In-House	R 83,200.00	**R 83,200.00**
1	On-Campus (Pretoria)	R 96,000.00	**R 96,000.00**

UPCOMING SESSIONS

Start	End	Method	Venue
04 Aug 2026	01 Sep 2026	On-Campus	Mauritius
05 Aug 2026	02 Sep 2026	On-Campus	Cape Town, South Africa
06 Aug 2026	03 Sep 2026	On-Campus	Dubai, UAE
07 Aug 2026	04 Sep 2026	On-Campus	Pretoria, South Africa
07 Aug 2026	04 Sep 2026	On-Campus	Lagos, Nigeria
10 Aug 2026	07 Sep 2026	On-Campus	Durban, South Africa
10 Aug 2026	07 Sep 2026	On-Campus	Mauritius
11 Aug 2026	08 Sep 2026	On-Campus	Cape Town, South Africa

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 116130) 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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