Accredited Africa Training Institute for Capacity Development
Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa
Tel: +27 12 004 8389 · Mobile: +27 65 077 6310
Email: apply@aaticd.co.za · Website: www.aaticd.co.za

COURSE BROCHURE

Scraper Operation And Earthmoving Equipment Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 116071 · NQF Level 2 · 20 Credits · 17 Days

COURSE OVERVIEW

This course equips learners with the knowledge and practical skills to safely and efficiently operate scrapers and other earthmoving equipment in construction and mining environments. It covers pre-operational checks, operational techniques, load management, and adherence to relevant safety regulations and site protocols.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	116071
Accreditation	SAQA Accredited · NQF Level 2 · 20 Credits
Duration	17 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS — verifiable online

LEARNING OUTCOMES

- Apply pre-operational inspection procedures to ensure equipment safety and readiness.
- Demonstrate safe and efficient scraper operation techniques, including loading, hauling, and dumping.
- Analyze site conditions and adjust operational methods to maintain stability and productivity.
- Implement load management strategies to optimize cycle times and reduce wear on equipment.
- Evaluate potential hazards and apply appropriate risk control measures in the work environment.
- Perform basic troubleshooting and routine maintenance tasks according to manufacturer guidelines.

WHO SHOULD ATTEND

- This course is intended for operators, supervisors, and technicians who are responsible for the operation, maintenance, or supervision of scraper and earthmoving equipment in the construction, mining, or civil engineering sectors.

COURSE OUTLINE

Day 1: Introduction to Earthmoving Equipment and Safety

- Overview of earthmoving industry in South Africa
- Types of equipment: excavators, bulldozers, graders, scrapers, loaders
- Legal framework: OHS Act, Mine Health and Safety Act
- Personal protective equipment (PPE) requirements
- Site safety rules and hazard awareness
- Operator responsibilities and conduct

Day 2: Scraper Fundamentals and Pre-Operation Checks

- Scraper types: elevating, open bowl, twin-engine
- Major components: bowl, apron, ejector, engine, transmission
- Daily inspection checklist (fluid levels, tyres, brakes, lights
- Pre-start checks and logbook procedures
- Control layout: steering, throttle, bowl, apron, ejector
- Instrument panel: gauges, warning lights

Day 3: Scraper Operation Basics - Starting, Moving, and Stopping

- Engine start procedure and warm-up
- Steering techniques (articulated vs. rigid
- Braking systems: service, secondary, parking
- Gear selection and throttle management
- Bowl, apron, and ejector basic operation
- Shutdown procedure and post-operation checks

Day 4: Loading Techniques - Cutting and Filling the Bowl

- Loading methods: self-loading, push-loading, elevator
- Cutting depth and angle adjustment
- Apron height control during loading
- Ejector positioning for even fill
- Material types and their effect on loading
- Avoiding common mistakes: overfilling, undercutting

Day 5: Hauling and Dumping Operations

- Hauling techniques: gear selection, braking on grades
- Rough terrain handling and obstacle avoidance
- Dump site approach and positioning
- Dumping sequence: raise apron, open bowl, eject
- Spreading material evenly
- Safety at dump sites: tip-over risks, visibility

Day 6: Grade Control and Fine Grading

- Understanding grade stakes and survey marks
- Laser grade control systems: setup and operation
- Fine grading techniques with scraper
- Adjusting bowl and apron for light cuts
- Checking grade with manual instruments

- Compaction requirements and rolling patterns

Day 7: Push-Pull Scraper Operations

- Push-pull scraper design: hitch, cushion hook
- Benefits: increased load capacity, reduced cycle time
- Coupling procedure: approach, connect, confirm
- Loading sequence: push-pull, then separate
- Uncoupling: safe disconnection
- Communication protocols between operators

Day 8: Material Handling and Compaction

- Soil classification: cohesive, granular, rock
- Moisture content and its effect on compaction
- Compaction principles: lift thickness, passes
- Scraper compaction techniques: spreading and rolling
- In-situ density tests (sand cone, nuclear gauge
- Adjusting operations based on test results

Day 9: Site Planning and Cycle Time Management

- Site layout: cut and fill areas, haul roads
- Cycle time components: load, haul, dump, return
- Factors affecting cycle time: distance, grade, material
- Load optimisation: target weight vs. volume
- Earthmoving calculations: bank, loose, compacted volumes
- Using GPS fleet management systems

Day 10: Advanced Scraper Techniques - Slopes and Adverse Conditions

- Operating on slopes: uphill loading, downhill dumping
- Side slope stability and tipping hazards
- Mud and soft ground: flotation, tyre chains
- Wet material handling: reduced load, slower speeds
- Recovery procedures: winching, towing
- Safety precautions in adverse weather

Day 11: Team Operations and Multiple Machine Coordination

- Fleet composition: scrapers, dozers, compactors
- Push-loading coordination with dozers
- Traffic management on site: one-way roads, turnarounds
- Hand signals and radio communication
- Maintaining separation and avoiding collisions
- Role of a spotter in tight areas

Day 12: Maintenance and Troubleshooting

- Daily and weekly maintenance checks
- Engine: oil, coolant, air filters
- Hydraulic system: fluid levels, leaks, filter changes
- Transmission and driveline: fluid, belts
- Tyre inspection and pressure
- Troubleshooting: starting issues, power loss, hydraulic hesitation

- Maintenance logbook entries

Day 13: **Environmental and Waste Management**

- Environmental legislation: NEMA, water use licenses
- Spill prevention: refuelling procedures, drip trays
- Spill response: containment, clean-up, reporting
- Waste management: oil, filters, tyres, scrap metal
- Dust suppression: water trucks, chemical binders
- Noise control: equipment maintenance, barriers

Day 14: **Emergency Procedures and First Aid**

- Emergency types: fire, rollover, collision, entrapment
- Emergency shutdown procedures
- Evacuation routes and muster points
- Basic first aid: cuts, fractures, burns, shock
- Fire classes and extinguisher use
- Reporting incidents and near misses

Day 15: **Practical Assessment Preparation and Review**

- Recap of pre-operation checks
- Loading, hauling, dumping, and grading practice
- Simulated assessment scenarios
- Feedback and coaching on technique
- Review of theory: safety, maintenance, planning
- Assessment criteria alignment with unit standard

Day 16: **Summative Practical Assessment**

- Pre-operation inspection (assessed
- Loading, hauling, and dumping (assessed
- Grade control and fine grading (assessed
- Safety compliance and communication (assessed
- Written assessment: theory questions
- Operator logbook completion

Day 17: **Final Review, Certification, and Career Pathways**

- Assessment results and feedback session
- Certification documentation: statement of results, certificate
- Continuing education: advanced equipment training
- Career pathways: supervisor, trainer, fleet manager
- Industry associations and networking
- Personal development plan for ongoing improvement

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 **20 NQF credits** at **NQF Level 2**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 53,800.00	**R 53,800.00**
1	In-House	R 69,900.00	**R 69,900.00**
1	On-Campus (Pretoria)	R 80,700.00	**R 80,700.00**

UPCOMING SESSIONS

Start	End	Method	Venue
04 Aug 2026	26 Aug 2026	On-Campus	Johannesburg, South Africa
05 Aug 2026	27 Aug 2026	On-Campus	Mauritius
06 Aug 2026	28 Aug 2026	On-Campus	Cape Town, South Africa
07 Aug 2026	31 Aug 2026	On-Campus	Dubai, UAE
10 Aug 2026	01 Sep 2026	On-Campus	Abu Dhabi, UAE
11 Aug 2026	02 Sep 2026	On-Campus	Durban, South Africa
11 Aug 2026	02 Sep 2026	On-Campus	Mauritius
12 Aug 2026	03 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 116071) 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.

Accredited Africa Training Institute for Capacity Development
Unit FO409, Hatfield Plaza, 1122 Burnett St, Hatfield 0028, Pretoria, Gauteng, South Africa
Tel: +27 12 004 8389 · WhatsApp: +27 65 077 6310 · apply@aaticd.co.za · www.aaticd.co.za