



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

Tower Crane Operation And Safety Certification Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 116255 · NQF Level 2 · 20 Credits · 17 Days

COURSE OVERVIEW

This course equips learners with the theoretical knowledge and practical skills required to operate tower cranes safely and efficiently in the construction and industrial sectors. It covers crane setup, load handling, communication protocols, and compliance with South African occupational health and safety regulations to minimize workplace incidents.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	116255
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 verify tower crane safety and functionality.
- Demonstrate correct techniques for lifting, moving, and placing loads using tower crane controls.
- Analyze load charts and weather conditions to determine safe lifting capacities and operational limits.
- Implement hand and radio communication signals to coordinate with ground personnel during lifting operations.
- Evaluate emergency procedures and shutdown protocols to respond effectively to crane malfunctions or hazards.
- Comply with relevant South African legislation and site-specific safety policies for tower crane operations.

WHO SHOULD ATTEND

- This course is designed for aspiring and experienced tower crane operators, construction site supervisors, and safety officers who require formal certification to operate tower cranes in compliance with SAQA unit standard 116255.

COURSE OUTLINE

Day 1: Introduction to Tower Crane Operations and Safety

- Overview of tower crane types and applications.
- Introduction to relevant legislation (OHSA, SANS, SAQA).
- Roles: operator, rigger, signalperson, supervisor.
- Safety culture and accident prevention principles.
- Course outcomes and unit standard 116255.
- Personal protective equipment (PPE) requirements.

Day 2: Tower Crane Components and Specifications

- Tower, jib, counter-jib, mast, slewing unit.
- Hoist mechanism, trolley, and hook block.
- Load chart interpretation and capacity calculations.
- Safety devices: overload limiters, anemometers, buffers.
- Electrical systems and controls overview.
- Pre-operational checks according to manufacturer guidelines.

Day 3: Site Preparation and Crane Assembly Basics

- Site layout and access for crane setup.
- Foundation design: concrete bases, ballast requirements.
- Assembly sequence: mast sections, slewing unit, jib.
- Climbing and tie-in procedures.
- Risk assessment for erection and dismantling.
- Competent person duties and communication.

Day 4: Rigging and Lifting Equipment

- Wire rope slings, chain slings, synthetic slings.
- Shackles, eye bolts, hooks, and spreader beams.
- SWL and working load limit (WLL) calculations.
- Inspection criteria and rejection standards.
- Hitches: vertical, choker, basket, and multi-leg.
- Effects of sling angle on capacity.

Day 5: Hand Signals and Radio Communication

- Standard hand signals: hoist, lower, stop, emergency stop.
- Radio procedures: clear speech, confirmation, emergency codes.
- Signalperson positioning and visibility.
- Communication with multiple cranes.
- Practical exercises in signaling.
- Common communication errors and how to avoid them.

Day 6: Pre-Operational Inspections and Daily Checks

- Daily inspection checklist: structural, mechanical, electrical.
- Checking safety devices: limit switches, brakes, anemometer.
- Lubrication points and fluid levels.
- Visual inspection of wire ropes and sheaves.
- Documentation: operator logbook, defect reporting.

- Handover procedures between shifts.

Day 7: Load Handling and Safe Lifting Practices

- Estimating load weight and center of gravity.
- Effects of wind on load stability.
- Load control: tag lines, push-pull techniques.
- Lifting near power lines and obstacles.
- Tandem lifts with two cranes.
- Avoiding sudden movements and shock loading.

Day 8: Operating Controls and Crane Maneuvers

- Control layout: joysticks, pedals, switches.
- Slewing: rotation control and braking.
- Hoisting: speed control and load positioning.
- Trolley travel: inching and precise placement.
- Simultaneous operations: hoist + slew + trolley.
- Emergency stop and safe shutdown.

Day 9: Lift Planning and Risk Assessment

- Lift plan components: load chart, rigging, path.
- Risk assessment methodology (HIRA).
- Hazard identification: overhead lines, ground conditions.
- Control measures: exclusion zones, permits.
- Documentation and approval by supervisor.
- Case studies of lift planning failures.

Day 10: Advanced Lifting Scenarios and Special Loads

- Lifting long loads: spreader beams, tag lines.
- Lifting near structures: clearance calculations.
- Personnel lifting: regulations and safety requirements.
- Confined space lifts: planning and communication.
- Wind speed limits and weather monitoring.
- Lifting in rain, fog, or extreme heat.

Day 11: Tower Crane Maintenance and Fault Finding

- Routine maintenance: lubrication, filter changes.
- Wire rope inspection and replacement criteria.
- Brake adjustment and testing.
- Electrical fault diagnosis: sensors, motors.
- Hydraulic system checks (if applicable).
- Maintenance logbooks and schedules.

Day 12: Emergency Procedures and Rescue Operations

- Emergency stop and shutdown procedures.
- Power failure: manual lowering and brakes.
- Fire on crane: extinguisher use and evacuation.
- Rescue from cab: harnesses, descent devices.
- Communication with emergency responders.
- Drill and practice scenarios.

Day 13: Legal Compliance and Documentation

- OHS Act sections 8, 9, 14: duties of employers and employees.
- SANS 10090 and other applicable standards.
- Incident reporting procedures.
- Operator certification requirements.
- Logbook and inspection record keeping.
- Penalties for non-compliance.

Day 14: Practical Assessment Preparation

- Full pre-operational inspection walkthrough.
- Control familiarization and smooth operation.
- Lift planning from scratch: load chart, rigging.
- Mock lifts with various loads.
- Communication and signaling practice.
- Feedback and corrective coaching.

Day 15: Practical Assessment – Part 1

- Assessed inspection of crane components.
- Start-up checks and logbook completion.
- Basic maneuvers: hoisting, slewing, trolley.
- Load chart interpretation exercise.
- Emergency stop demonstration.
- Assessor feedback and recording.

Day 16: Practical Assessment – Part 2

- Lift planning and risk assessment.
- Rigging selection and inspection.
- Lifting and placing loads accurately.
- Tandem lift or special load if applicable.
- Emergency lowering and rescue simulation.
- Final assessment debrief.

Day 17: Theory Exam and Course Wrap-Up

- Written exam: multiple choice and short answer.
- Theory exam review and discussion.
- Individual feedback on practical assessments.
- Certification process and SAQA registration.
- Career pathways: advanced crane types, supervisory roles.
- Course evaluation and closing.

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
03 Aug 2026	25 Aug 2026	On-Campus	Pretoria, South Africa
03 Aug 2026	25 Aug 2026	On-Campus	Lagos, Nigeria
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	Mauritius

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 116255) 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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