



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

Textile Wet Processes Machinery Maintenance Training

Manufacturing, Engineering and Technology / Manufacturing and Assembly

Unit Standard 116331 · NQF Level 4 · 50 Credits · 47 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to maintain machinery used in textile wet processes, including scouring, bleaching, dyeing, and finishing. It covers maintenance planning, fault diagnosis, and safety procedures to ensure operational efficiency and compliance with industry standards.

Category	Manufacturing, Engineering and Technology
Subfield	Manufacturing and Assembly
Unit Standard	116331
Accreditation	SAQA Accredited · NQF Level 4 · 50 Credits
Duration	47 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply maintenance schedules and procedures for textile wet process machinery to prevent breakdowns.
- Analyze common faults in wet processing equipment and implement corrective actions.
- Evaluate the condition of machine components using diagnostic tools and techniques.
- Implement safety protocols and environmental regulations during maintenance activities.
- Demonstrate proper record-keeping and reporting of maintenance tasks and outcomes.
- Design a basic preventive maintenance plan for a textile wet processing line.

WHO SHOULD ATTEND

- This course is designed for maintenance technicians, machine operators, and production supervisors in textile manufacturing facilities who are responsible for the upkeep and repair of wet processing equipment.

COURSE OUTLINE

Day 1: Introduction to Textile Wet Processes and Machinery

- Overview of textile wet processes: pre-treatment, dyeing, printing, finishing.
- Types of machinery: jiggers, winches, jet dyeing machines, pad-steam ranges.
- Role of maintenance in equipment reliability and product quality.
- Safety protocols in maintenance operations.
- Introduction to maintenance planning and documentation.

Day 2: Fundamentals of Mechanical Maintenance

- Mechanical power transmission: belts, chains, gears, couplings.
- Bearings: types, selection, and lubrication.
- Fasteners and thread standards.
- Use of torque wrenches, callipers, micrometers.
- Lockout/tagout procedures.
- Housekeeping and tool maintenance.

Day 3: Electrical Fundamentals for Textile Machinery

- AC/DC circuits and measurements.
- Motors: types (AC induction, DC), starters, variable frequency drives.
- Sensors and actuators: proximity switches, solenoid valves.
- Reading electrical schematics.
- Electrical safety: PPE, isolation, testing.
- Troubleshooting basic electrical faults.

Day 4: Hydraulic and Pneumatic Systems in Wet Processing

- Hydraulic pumps, valves, cylinders, filters.
- Pneumatic compressors, FRL units, actuators.
- Reading fluid power diagrams.
- Oil and air contamination control.
- Troubleshooting leaks and pressure drops.
- Safety in hydraulic/pneumatic maintenance.

Day 5: Pre-treatment Machinery Maintenance

- Singeing machines: burners, brushes, cooling rollers.
- Desizing ranges: padders, J-boxes, washing compartments.
- Scouring and bleaching: kier, J-box, roller bed steamer.
- Maintenance of padders: nip pressure, roller alignment.
- Cleaning of J-boxes and washing chambers.
- Lubrication of chain drives and bearings.

Day 6: Dyeing Machinery Maintenance – Part 1

- Winch dyeing machine: drive system, reel, liquor circulation.
- Jigger: tension control, roller alignment, braking system.
- Maintenance of seals and gaskets.
- Cleaning of dyeing vessels.
- Inspection of heating coils and temperature sensors.
- Troubleshooting uneven dyeing due to mechanical faults.

Day 7: Dyeing Machinery Maintenance – Part 2

- Jet dyeing machines: nozzle, heat exchanger, circulation pump.
- Soft-flow dyeing: fabric transport, liquor ratio control.
- Maintenance of pumps and valves.
- Cleaning of heat exchangers and filters.
- Inspection of safety devices: pressure relief, door interlocks.
- Preventive maintenance checklist for jet machines.

Day 8: Printing Machinery Maintenance

- Rotary screen printing: screen mounting, squeegee, dryer.
- Flatbed printing: table, carriage, screen alignment.
- Digital printing: print heads, ink delivery, curing units.
- Maintenance of screens: tensioning, cleaning, storage.
- Lubrication of bearings and drives.
- Troubleshooting registration errors and colour streaks.

Day 9: Finishing Machinery Maintenance

- Stenter: chain, clips, fans, heating zones.
- Calendar: rolls, pressure control, heating.
- Coating machines: knife-over-roll, padder, dryer.
- Maintenance of thermal fluid heaters and heat exchangers.
- Cleaning of exhaust ducts and filters.
- Alignment and balancing of rollers.

Day 10: Water and Wastewater Systems Maintenance

- Water softening, reverse osmosis, deionisation.
- Effluent treatment: screens, neutralisation, sedimentation.
- Maintenance of pumps: centrifugal, diaphragm, dosing.
- Pipework inspection for leaks and corrosion.
- Valve maintenance: gate, globe, ball, butterfly.
- Monitoring and recording water usage.

Day 11: Steam and Condensate Systems

- Boiler basics: types, safety valves, water treatment.
- Steam distribution: piping, insulation, pressure reducing valves.
- Steam traps: types (thermostatic, thermodynamic, float), testing.
- Condensate return: pumps, flash tanks.
- Insulation maintenance.
- Energy saving: condensate recovery, leak repair.

Day 12: Instrumentation and Control Systems

- Temperature sensors: RTD, thermocouple, calibration.
- pH and conductivity meters: calibration, electrode care.
- Flow meters: magnetic, ultrasonic, maintenance.
- Pressure transmitters and gauges.
- Controllers: PID, PLC basics.
- Troubleshooting control loops: sensor, controller, actuator.

Day 13: Automation and PLC Systems

- PLC hardware: CPU, I/O modules, power supply.
- Ladder logic basics: reading and simple edits.
- HMI navigation and alarm handling.
- SCADA overview: data logging, trends.
- Troubleshooting PLC faults: I/O checks, power issues.
- Safety: emergency stops, interlocks.

Day 14: Predictive Maintenance Techniques

- Vibration analysis: sensors, FFT, bearing faults.
- Thermography: camera use, hot spots, electrical faults.
- Oil analysis: sampling, contamination, wear debris.
- Ultrasonic testing: leaks, bearing condition.
- Implementing a predictive maintenance program.
- Case studies: predicting pump and motor failures.

Day 15: Maintenance Planning and Scheduling

- Maintenance strategies: reactive, preventive, predictive.
- Creating PM schedules based on OEM recommendations.
- Work order systems: priority, assignment, close-out.
- Spare parts management: criticality, min-max levels.
- Shutdown planning: scope, resources, timeline.
- Key performance indicators: MTBF, MTTR, availability.

Day 16: Troubleshooting Methodology

- Troubleshooting steps: define, gather data, analyse, test, resolve.
- Common faults: fabric creasing, uneven dyeing, colour variation.
- Mechanical: vibration, noise, misalignment.
- Electrical: motor tripping, sensor failure.
- Process: temperature, pH, pressure deviations.
- Root cause analysis: fishbone, 5 whys.

Day 17: Safety and Environmental Compliance

- OHS Act: duties, risk assessment, incident reporting.
- Safe work permits: hot work, confined space, electrical.
- Chemical safety: MSDS, PPE, spill response.
- Environmental regulations: waste disposal, emissions.
- Fire safety: extinguishers, evacuation.
- Audits and inspections.

Day 18: Quality and Continuous Improvement

- Quality parameters: shade, fastness, hand feel.
- Impact of maintenance on quality: roller marks, stains.
- Lean maintenance: TPM, OEE.
- 5S: sort, set in order, shine, standardise, sustain.
- Kaizen: continuous improvement projects.
- Root cause analysis for quality defects.

Day 19: Practical Workshop – Simulated Maintenance

- Practical exercises: bearing replacement, belt tensioning.

- Calibration of temperature and pH sensors.
- Troubleshooting a simulated fault on a dyeing machine.
- Use of CMMS to log work.
- Team-based scenario: emergency breakdown response.
- Debrief and lessons learned.

Day 20: Assessment and Course Review

- Written assessment: theory questions.
- Practical assessment: hands-on maintenance task.
- Course review: Q&A, feedback.
- Certificate of competence criteria.
- Action plan: applying learning to workplace.
- Course evaluation and close.

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 **50 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 130,600.00	R 130,600.00
1	In-House	R 169,800.00	R 169,800.00
1	On-Campus (Pretoria)	R 195,900.00	R 195,900.00

UPCOMING SESSIONS

Start	End	Method	Venue
05 Aug 2026	08 Oct 2026	On-Campus	Mauritius
06 Aug 2026	09 Oct 2026	On-Campus	Cape Town, South Africa
07 Aug 2026	12 Oct 2026	On-Campus	Dubai, UAE
10 Aug 2026	13 Oct 2026	On-Campus	Abu Dhabi, UAE
11 Aug 2026	14 Oct 2026	On-Campus	Durban, South Africa
11 Aug 2026	14 Oct 2026	On-Campus	Mauritius
12 Aug 2026	15 Oct 2026	On-Campus	Cape Town, South Africa
13 Aug 2026	16 Oct 2026	On-Campus	Dubai, 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 116331) 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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