



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

Lathe Operation and Monitoring

Manufacturing, Engineering and Technology / Manufacturing and Assembly

Unit Standard 258679 · NQF Level 2 · 12 Credits · 9 Days

COURSE OVERVIEW

This course equips learners with the skills to safely and efficiently operate and monitor a lathe in a manufacturing environment. Participants will gain practical knowledge of lathe setup, tooling, machining operations, and quality control to produce components to specification.

Category	Manufacturing, Engineering and Technology
Subfield	Manufacturing and Assembly
Unit Standard	258679
Accreditation	SAQA Accredited · NQF Level 2 · 12 Credits
Duration	9 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Demonstrate safe work practices and adherence to health and safety regulations when operating a lathe.
- Apply correct procedures for setting up and adjusting lathe components, including chucks, centres, and tool posts.
- Perform basic turning operations such as facing, cylindrical turning, taper turning, and parting-off to specified dimensions.
- Monitor machining processes and make necessary adjustments to achieve required tolerances and surface finishes.
- Inspect finished workpieces using measuring instruments and interpret results to ensure conformity to specifications.
- Implement routine maintenance procedures and identify common faults in lathe operation.

WHO SHOULD ATTEND

- This course is designed for machine operators, artisans, and technicians in engineering and manufacturing sectors who need to operate a lathe as part of their job functions.

COURSE OUTLINE

Day 1: Introduction to Lathe Operation and Safety

- Overview of lathe types and applications
- Lathe components: headstock, tailstock, carriage, bed
- Workholding methods: chucks, collets, faceplates
- Cutting tool materials and geometry
- Safety regulations and lockout/tagout procedures
- Housekeeping and fire prevention
- Introduction to machine manuals and specifications

Day 2: Lathe Setup and Workholding

- Mounting and truing workpieces in chucks
- Using centres and steady rests
- Tool post types and tool holder selection
- Setting tool height and centre alignment
- Workpiece inspection and runout measurement
- Lubrication and coolant systems

Day 3: Turning Operations – Facing, Straight Turning, and Shouldering

- Cutting speed, feed rate, and depth of cut calculations
- Facing techniques and tool approach
- Straight turning with carriage feed
- Shoulder turning: square, angular, and radiused
- Precision measurement using micrometers and callipers
- Surface finish parameters

Day 4: Taper Turning and Knurling

- Taper turning methods: compound rest, tailstock offset, taper attachment
- Calculating taper per foot and included angle
- Knurling tool selection and alignment
- Knurling patterns: diamond, straight, and helical
- Inspection of tapers using ring gauges and sine bars

Day 5: Thread Cutting – External and Internal Threads

- Thread forms: metric, imperial, Whitworth, Acme
- Gear train setup for thread cutting
- Thread chasing dial operation
- Cutting external threads with multiple passes
- Cutting internal threads with boring bar
- Thread measurement using thread gauges and three-wire method

Day 6: Boring, Drilling, and Reaming

- Boring bar types and setup
- Boring techniques for through and blind holes
- Drilling with twist drills in tailstock
- Reaming for precise hole sizing
- Alignment and concentricity checks

- Cutting fluids for hole operations

Day 7: Parting, Grooving, and Form Turning

- Parting tool geometry and setup
- Parting techniques: feed rate and coolant
- Grooving: external and internal grooves
- Form tool design and application
- Chatter suppression methods
- Inspection of groove width and depth

Day 8: Advanced Operations – Eccentric Turning and Multi-start Threads

- Eccentric turning: chuck offset and faceplate methods
- Multi-start thread calculation and setup
- Thread chasing for multi-start threads
- Using steady and follower rests
- Combined operations: turning, threading, and boring
- Process planning for complex components

Day 9: Quality Control, Troubleshooting, and Final Assessment

- Dimensional inspection using gauges and CMM basics
- Surface finish measurement
- Common faults: chatter, taper errors, tool wear
- Troubleshooting: speeds, feeds, tool geometry
- Maintenance: cleaning, lubrication, and minor adjustments
- Final practical assessment and review

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 **12 NQF credits** at **NQF Level 2**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 33,300.00	R 33,300.00
1	In-House	R 43,300.00	R 43,300.00
1	On-Campus (Pretoria)	R 50,000.00	R 50,000.00

UPCOMING SESSIONS

Start	End	Method	Venue
07 Aug 2026	19 Aug 2026	On-Campus	Pretoria, South Africa
07 Aug 2026	19 Aug 2026	On-Campus	Lagos, Nigeria
10 Aug 2026	20 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	20 Aug 2026	On-Campus	Mauritius
11 Aug 2026	21 Aug 2026	On-Campus	Cape Town, South Africa
12 Aug 2026	24 Aug 2026	On-Campus	Dubai, UAE
13 Aug 2026	25 Aug 2026	On-Campus	Pretoria, South Africa
14 Aug 2026	26 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 258679) 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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