



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

Surface Grinding Machine Operation and Monitoring

Manufacturing, Engineering and Technology / Manufacturing and Assembly

Unit Standard 258695 · NQF Level 2 · 8 Credits · 5 Days

COURSE OVERVIEW

This course equips learners with the competencies required to operate and monitor a surface grinding machine safely and efficiently. Participants will gain practical skills in setting up, grinding, and inspecting workpieces to meet specified tolerances, while adhering to quality standards and workplace procedures.

Category	Manufacturing, Engineering and Technology
Subfield	Manufacturing and Assembly
Unit Standard	258695
Accreditation	SAQA Accredited · NQF Level 2 · 8 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Demonstrate knowledge of surface grinding machine components, controls, and safety features.
- Prepare and set up the surface grinding machine for operation according to specifications.
- Operate the surface grinding machine to grind workpieces to required dimensions and surface finish.
- Monitor grinding operations and adjust parameters to maintain quality and productivity.
- Inspect completed workpieces using measuring instruments and verify compliance with tolerances.
- Apply workplace safety procedures and maintain housekeeping standards during grinding operations.

WHO SHOULD ATTEND

- This course is designed for machine operators, artisans, and technicians in the manufacturing and engineering sectors who are responsible for surface grinding operations.
- It is also suitable for individuals seeking to formalize their skills in precision grinding.

COURSE OUTLINE

Day 1: Introduction to Surface Grinding and Safety

- Overview of surface grinding in manufacturing.
- Types of surface grinding machines (horizontal spindle, vertical spindle).
- Machine components: table, spindle, wheel head, coolant system.
- Safety protocols: guarding, emergency stop, electrical safety.
- Personal protective equipment (PPE) for grinding operations.
- Workholding methods: magnetic chucks, vises, fixtures.
- Introduction to grinding wheels: types, grades, and structures.

Day 2: Grinding Wheel Selection, Mounting, and Dressing

- Grinding wheel marking system (ANSI/ISO).
- Wheel selection based on workpiece material and finish requirements.
- Wheel mounting procedures: flanges, blotters, and balancing.
- Wheel dressing tools: single-point diamond, rotary dressers.
- Dressing techniques to achieve desired surface finish.
- Safety checks before wheel operation.
- Coolant types and application methods.

Day 3: Machine Setup, Workholding, and Basic Operations

- Machine setup: cleaning, checking coolant levels, wheel inspection.
- Workpiece alignment: using dial indicators and squaring blocks.
- Magnetic chuck operation: demagnetizing and clamping.
- Setting grinding parameters: depth of cut, feed rate, table speed.
- Performing rough grinding passes for stock removal.
- Finishing passes for surface quality and tolerance.
- In-process measurement: micrometers, surface roughness testers.
- Coolant flow adjustment and chip management.

Day 4: Advanced Techniques, Monitoring, and Troubleshooting

- Grinding techniques: plunge grinding, traverse grinding, creep feed.
- Monitoring spindle load, vibration, and temperature.
- Surface finish measurement and interpretation (R_a , R_z).
- Common defects: burn, chatter, scratches, taper.
- Troubleshooting defects: adjusting parameters, wheel selection.
- Wheel wear monitoring and replacement criteria.
- Coolant filtration and maintenance.
- Process optimization for productivity and quality.

Day 5: Quality Assurance, Maintenance, and Practical Integration

- Final inspection: dimensional accuracy, parallelism, flatness.
- Quality documentation and reporting.
- Routine maintenance: cleaning, lubrication, belt tension.
- Troubleshooting mechanical and electrical issues.
- Interpreting engineering drawings and tolerances.
- Workpiece handling and deburring.
- Recap of key skills and assessment preparation.

- Industry best practices and continuous 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 **8 NQF credits** at **NQF Level 2**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 23,000.00	R 23,000.00
1	In-House	R 29,900.00	R 29,900.00
1	On-Campus (Pretoria)	R 34,500.00	R 34,500.00

UPCOMING SESSIONS

Start	End	Method	Venue
17 Aug 2026	21 Aug 2026	On-Campus	Harare, Zimbabwe
17 Aug 2026	21 Aug 2026	On-Campus	Shenzhen, China
17 Aug 2026	21 Aug 2026	On-Campus	Durban, South Africa
17 Aug 2026	21 Aug 2026	On-Campus	Abu Dhabi, UAE
17 Aug 2026	21 Aug 2026	On-Campus	Pretoria, South Africa
17 Aug 2026	21 Aug 2026	On-Campus	Dubai, UAE
24 Aug 2026	28 Aug 2026	On-Campus	Abu Dhabi, UAE
24 Aug 2026	28 Aug 2026	On-Campus	Durban, 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 258695) 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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