



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

Predictive Maintenance

Custom Courses / Engineering & Technical Maintenance

Unit Standard AATICD-0217 · NQF Level 5 · 10 Credits · 5 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to implement predictive maintenance strategies using data analysis and condition-monitoring technologies. Participants will learn to anticipate equipment failures, optimize maintenance schedules, and reduce downtime. The course aligns with industry standards to enhance operational efficiency and asset reliability.

Category	Custom Courses
Subfield	Engineering & Technical Maintenance
Unit Standard	AATICD-0217
Accreditation	SAQA Accredited · NQF Level 5 · 10 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply predictive maintenance principles to identify potential equipment failures before they occur.
- Analyze sensor data and historical trends to forecast maintenance needs using statistical tools.
- Evaluate the effectiveness of different condition-monitoring techniques (vibration analysis, thermography, oil analysis).
- Design a predictive maintenance plan that integrates with existing computerized maintenance management systems (CMMS).
- Implement predictive maintenance schedules that optimize resource allocation and minimize production disruptions.
- Demonstrate the ability to interpret predictive maintenance reports and recommend corrective actions.

WHO SHOULD ATTEND

- Maintenance managers, reliability engineers, technicians, and operations personnel seeking to transition from reactive to predictive maintenance approaches.

COURSE OUTLINE

Day 1: Introduction to Predictive Maintenance and Condition Monitoring

- Definition and importance of predictive maintenance
- Comparison of maintenance strategies: reactive, preventive, predictive, proactive
- Overview of condition monitoring techniques: vibration analysis, thermography, oil analysis, ultrasound
- Introduction to reliability-centred maintenance (RCM)
- Benefits: reduced downtime, cost savings, extended asset life
- Regulatory and safety considerations (OHS Act, SAQA outcomes)
- Key performance indicators for predictive maintenance

Day 2: Vibration Analysis and Thermography

- Vibration theory: amplitude, frequency, phase
- Vibration sensors: accelerometers, proximity probes
- Data collection: routes, sampling rates, FFT analysis
- Common fault frequencies: imbalance, misalignment, bearing defects
- Thermography basics: emissivity, thermal patterns
- Types of thermal anomalies: hot spots, temperature gradients
- Equipment for thermography: IR cameras, thermal imaging
- Safety precautions when using thermal imaging

Day 3: Oil Analysis and Ultrasonic Testing

- Oil analysis parameters: viscosity, particle count, water content, acid number
- Wear debris analysis: ferrography, spectroscopy
- Sampling techniques: proper locations, clean sampling
- Ultrasonic theory: frequency ranges, airborne vs. structure-borne
- Applications: leak detection, bearing condition, electrical discharge
- Ultrasonic instruments: detectors, contact probes
- Data interpretation and trending
- Integration with other condition monitoring techniques

Day 4: Data Analysis, Trending, and Decision Making

- Data collection and management: databases, spreadsheets, CMMS
- Trend analysis: plotting, moving averages, rate of change
- Setting baselines and alarm limits
- Statistical process control for condition monitoring
- Root cause analysis techniques
- Decision matrix for maintenance actions
- Reporting and documentation
- Case studies on successful predictive maintenance interventions

Day 5: Implementation, Integration, and Continuous Improvement

- Steps to implement a predictive maintenance programme
- Selecting appropriate technologies and equipment
- Training and skill development for maintenance teams
- Integration with preventive and corrective maintenance
- Cost-benefit analysis: ROI, payback period
- Key performance indicators and benchmarking

- Continuous improvement: PDCA cycle, feedback loops
- Review of unit standard outcomes and assessment preparation

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 **10 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 24,200.00	R 24,200.00
1	In-House	R 31,400.00	R 31,400.00
1	On-Campus (Pretoria)	R 36,200.00	R 36,200.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	14 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Abu Dhabi, UAE
17 Aug 2026	21 Aug 2026	On-Campus	Harare, Zimbabwe
17 Aug 2026	21 Aug 2026	On-Campus	Shenzhen, China
24 Aug 2026	28 Aug 2026	On-Campus	Bangkok, Thailand
24 Aug 2026	28 Aug 2026	On-Campus	Victoria Falls, Zimbabwe
31 Aug 2026	04 Sep 2026	On-Campus	Lusaka, Zambia
31 Aug 2026	04 Sep 2026	On-Campus	London, UK

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 AATICD-0217) 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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