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

Gas Turbine Power Plant Operations

Custom Courses / Energy, Oil and Gas

Unit Standard AATICD-0503 · NQF Level 5 · 6 Credits · 3 Days

COURSE OVERVIEW

This course equips learners with the comprehensive knowledge and practical skills required to operate gas turbine power plants safely and efficiently. It covers fundamental principles, operational procedures, and safety protocols, ensuring that participants can manage routine operations, troubleshoot common issues, and contribute to plant reliability and performance.

Category	Custom Courses
Subfield	Energy, Oil and Gas
Unit Standard	AATICD-0503
Accreditation	SAQA Accredited · NQF Level 5 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS — verifiable online

LEARNING OUTCOMES

- Apply the principles of gas turbine thermodynamics and cycle analysis to optimize plant performance.
- Demonstrate the correct procedures for starting, running, and shutting down a gas turbine power plant.
- Analyze operational parameters and data to identify trends, anomalies, and potential faults.
- Evaluate safety and environmental regulations and implement appropriate control measures.
- Implement routine maintenance and inspection schedules to ensure equipment reliability.
- Design and execute emergency response procedures for critical plant events.

WHO SHOULD ATTEND

- This course is designed for aspiring and current power plant operators, technicians, and maintenance personnel who are involved in the operation or supervision of gas turbine power plants.
- It is also suitable for engineering graduates seeking specialized knowledge in power generation.

COURSE OUTLINE

Day 1: Gas Turbine Fundamentals and Plant Systems

- Introduction to gas turbine power plants and their role in the energy sector
- Thermodynamic principles: Brayton cycle, compression, combustion, expansion
- Major components: axial compressor, combustion chamber, power turbine
- Auxiliary systems: lubrication, fuel supply, cooling, and control systems
- Safety regulations and environmental compliance
- Overview of plant instrumentation and control systems
- Performance metrics: efficiency, heat rate, and output

Day 2: Operation, Control, and Performance Monitoring

- Start-up and shutdown procedures: normal, emergency, and black start
- Load control and frequency response
- Monitoring and control of key parameters: TIT, exhaust temp, combustion dynamics
- Alarm management and trip systems
- Troubleshooting common operational issues: vibration, surge, overheating
- Performance monitoring: heat rate, efficiency, and emissions
- Data logging and trend analysis for predictive maintenance

Day 3: Advanced Operations, Maintenance Interface, and Emergency Response

- Advanced operational strategies: peak load, cyclic operation, and turndown
- Maintenance interface: inspection intervals, work permits, and isolation
- Emergency response: fire, fuel leaks, and equipment failure
- Condition-based monitoring: vibration analysis, oil analysis, thermography
- Environmental compliance: emissions monitoring and reporting
- Case studies of operational incidents and lessons learned
- Review and assessment of operational competencies

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 **6 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 13,900.00	**R 13,900.00**
1	In-House	R 18,700.00	**R 18,700.00**
1	On-Campus (Pretoria)	R 20,800.00	**R 20,800.00**

UPCOMING SESSIONS

Start	End	Method	Venue
02 Dec 2026	04 Dec 2026	On-Campus	Victoria Falls, Zimbabwe
02 Dec 2026	04 Dec 2026	On-Campus	Dubai, UAE
09 Dec 2026	11 Dec 2026	On-Campus	Maseru, Lesotho
09 Dec 2026	11 Dec 2026	On-Campus	Kigali, Rwanda
09 Dec 2026	11 Dec 2026	On-Campus	Accra, Ghana
09 Dec 2026	11 Dec 2026	On-Campus	Cape Town, South Africa
09 Dec 2026	11 Dec 2026	On-Campus	Abu Dhabi, UAE
09 Dec 2026	11 Dec 2026	On-Campus	Victoria Falls, Zimbabwe

Contact us if no suitable date is listed — on-demand sessions can be arranged for groups.

HOW TO GET A QUOTATION OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard AATICD-0503) and click **Get A Quotation**. 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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