

GAS TURBINES: OPERATION, TECHNOLOGY AND TROUBLESHOOTING

“Enhance Performance, Reliability, and Efficiency Through Expert Understanding of Gas Turbine Systems”

Schedule

Venue (In-house)	Fees
At Your Organization Premises	Ask For The Quotation

► **Available delivery methods:** In-House Training

Introduction

Gas turbines are the heart of many power generation and industrial processes, valued for their high efficiency and reliability. However, their performance depends greatly on proper operation, monitoring, and maintenance practices.

This course provides participants with a thorough understanding of gas turbine fundamentals, components, operation principles, and performance parameters. It focuses on the latest technologies, control systems, and diagnostic tools used to ensure efficient operation. Participants will also learn troubleshooting techniques to identify and correct performance issues, vibrations, and mechanical faults.

By the end of the course, attendees will be equipped to optimize turbine performance, reduce downtime, and extend equipment life through improved operational and maintenance practices.

Objectives

By completing this course, participants will be able to:

- Understand the basic principles and thermodynamics of gas turbines
- Identify and explain key components and their functions
- Analyze performance parameters and efficiency factors
- Operate gas turbines safely and effectively
- Recognize common problems and failure modes
- Apply troubleshooting techniques for mechanical and control issues
- Understand the role of condition monitoring and diagnostics
- Implement maintenance strategies to improve reliability and uptime

Why Attend

Gas turbines are complex and costly systems—requiring trained professionals to ensure safe, efficient, and reliable performance. This course gives you the essential knowledge and practical insights needed to handle real-world turbine challenges.

Whether you are responsible for operations, maintenance, or performance optimization, this program will strengthen your technical expertise and help your organization achieve higher energy efficiency and reduced maintenance costs.

Target Audience

This course is ideal for:

- Mechanical, Electrical, and Maintenance Engineers
- Power Plant and Utility Operators
- Process and Plant Engineers
- Instrumentation and Control Engineers
- Maintenance Technicians and Supervisors
- Reliability and Condition Monitoring Specialists
- Anyone involved in gas turbine operation, inspection, or maintenance

Individual Benefits

- Gain a comprehensive understanding of gas turbine systems
- Improve ability to diagnose and troubleshoot performance issues
- Learn best practices for operation and preventive maintenance
- Enhance professional competence in turbine technology
- Strengthen decision-making skills in plant reliability and safety

Organizational Benefits

- Improve gas turbine reliability, performance, and efficiency
- Reduce maintenance costs and unplanned shutdowns
- Enhance operational safety and energy efficiency
- Extend turbine life through effective maintenance strategies
- Build skilled and knowledgeable in-house technical staff

Instructional Methodology

The course uses a blend of theory and practical learning through:

- Instructor-led lectures and discussions
- Real-world case studies and system simulations
- Troubleshooting exercises and diagnostic examples
- Group problem-solving sessions
- Visual presentations of turbine components and performance data

Course Outline

- Module 1: Fundamentals of Gas Turbine Technology and Thermodynamics
- Module 2: Major Components – Compressors, Combustors, and Turbines
- Module 3: Fuel Systems, Ignition, and Control Mechanisms
- Module 4: Performance Parameters and Efficiency Improvements
- Module 5: Start-up, Operation, and Shutdown Procedures
- Module 6: Common Failures, Faults, and Troubleshooting Techniques
- Module 7: Condition Monitoring and Vibration Analysis
- Module 8: Preventive and Predictive Maintenance Strategies
- Module 9: Advanced Gas Turbine Technologies and Upgrades
- Module 10: Case Studies and Best Practices in Turbine Operation

Certification

Upon successful completion, participants will receive a Certificate in Gas Turbines: Operation, Technology and Troubleshooting, recognizing their knowledge and skills in operating, maintaining, and optimizing gas turbine systems.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

In-House / Customized Training

Interested in running this course for your team?

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