€TRAINING

Gas Turbines Core Components

7 - 11 December 2025
Dubai (UAE)

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REF: E1449 DATE: 7 - 11 December 2025 Venue: Dubai (UAE) - Fee: 5830 Euro

Introduction:

This training program offers comprehensive instruction on the operation, technology, and maintenance of gas turbines. Through it, participants will develop the skills needed to troubleshoot issues, optimize performance, and ensure the reliable operation of gas turbine systems.

Program Objectives:

By the end of this program, participants will be able to:

- Explore the stages of the gas turbine cycle and its operational principles.
- Operate and maintain air inlet systems, filtration systems, pulse cleaning systems, and evaporative coolers.
- Gain in-depth knowledge of the compressor section, including rotor, guide vanes, and compressor blading.
- Demonstrate effective control and protection system operations using turbine control terms.
- Describe the construction and operation of turbine sections, fuel control systems, and generators.

Targeted Audience:

- Mechanical, electrical, and aerospace engineers.
- Engineers and technical specialists.
- Technicians involved in the operation, maintenance, and troubleshooting of gas turbines.
- Professionals in the energy industry, particularly those focused on turbine technology and optimization.
- Supervisors and managers overseeing turbine operations and maintenance.

Program Outline:

Unit 1:

Gas Turbine Theory and Air Inlet System:

- Gas turbine operation cycle.
- Air inlet system and its purpose.
- Compressor system components and operation.

- Combustion system components.
- Gas path and its function in turbine operation.

Unit 2:

Compressor and Combustion System:

- Compressor operation and function.
- Rotor and compressor blading components.
- Role of variable guide vanes in compressor performance.
- Purpose and operation of the combustion system.
- Key components in the combustion system crossfire tubes, spark plugs, flame detectors.

Unit 3:

Turbine Section and Support Systems:

- Turbine construction and operational principles.
- Rotor cooling importance and function.
- Turbine bucket components and their role.
- Function of nozzles and bearings in turbine operation.
- Fuel control systems and their operation.

Unit 4:

Air Filtration, Generator, and Plant Operations:

- Air inlet and filtration system purpose and operation.
- Pulse cleaning operation and its set points.
- Benefits and operation of evaporative cooling.
- Generator theory and construction.
- Procedures for starting and cooling generators.

Unit 5:

Controls and Monitoring:

- Overview of control panel functions.
- Key terms for plant operations.
- Operator commands for plant functions.
- Controls for trip oil, overspeed, over-temperature, flame detection, and vibration detection.
- Importance and operation of combustion monitoring systems.