Advanced Gas Turbine Maintenance & Troubleshooting

Roxby Training Solutions Ltd, Unit 4 John Clarke Centre, Dockside Road,
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COURSE CONTENT

Aim

To appreciate how theoretical principles are met through varying design and construction techniques and how these affect operating parameters across differing types of Gas Turbine Engine and how this theory can be applied through practical problem solving to overcome common problems encountered with this type of equipment.

To investigate aerodynamic and mechanical design features.

To investigate major Gas Turbine Engine systems.

To undertake fault finding and problem solving of major Gas Turbine Engine systems.

To apply knowledge to undertake monitoring, inspection and maintenance methods.

To investigate Gas Turbine Engine performance characteristics.

Course Objectives

In terms of gas turbine engine knowledge, maintenance and management - at the conclusion of this 5 day program, learners should be able to:

- Explain the mechanical and aerodynamic processes of a Gas Turbine Engine with regard to airflow and gas flow passing through an engine. In particular, the relationship between intake, compressor, combustor and exhaust.
- Understand and fully describe major engine systems such as: Fuel; lubrication; airflow control; seals and bearings; cooling air; starting; monitoring and control.
- Conduct problem solving simulations and perform monitoring, inspection and maintenance tasks.
- Explain engine performance characteristics and be able to fault diagnose performance anomalies.

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Pre-requisites

The program is pitched at a level 3/4 format. That is, the average level of understanding and skill should be conducive with several years experience as a qualified Technician (level 3) or that of a newly qualified or less experienced Engineer or Graduate (level 4).

Additionally, other Engineers, Managers/Executives and Support Staff could benefit from this program as a means of an informative introduction and complementary overview to Gas Turbine Technology.

Course Duration

This course is of 5 days in duration

Optimum Number

Maximum of 6 recipients is recommended.

Training Aids

Portable visual aids, program notes, electronic images, problem solving exercises and all assessment material supplied. Ideally, access to a 'live' industrial gas turbine engine or a training derivative would be desirable.

Assessment

Assessment is conducted using a number of different methods. All methods are designed to be non-threatening and accurately measure understanding which in turn assists with knowledge retention. These methods are commonly used:

1. As an integrative and non obtrusive part of the learning process.
2. In periodical assessment trigger points.
3. As systematic reinforcement following topic conclusion.
4. As a summative review of understanding and to consolidate value added knowledge.

A full report detailing an analytical performance profile is produced for each learner.

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COURSE SYLLABUS - Five Days

SESSION 1	SESSION 2	SESSION 3	SESSION 4
GTE5 FOUNDATION	GTE5 FOUNDATION	GTE5 FOUNDATION	GTE5 FOUNDATION
Introduction to GTE Format, Layout & Derivatives. Otto & Brayton Cycles	Pressure, Velocity & Temperature Divergent /Convergent Ducts. Bernoulli's Principle	Air intake, Compressor and Airflow	Combustion Section & Gas Flow

SESSION 1	SESSION 2	SESSION 3	SESSION 4
GTE5 FOUNDATION	GTE5 FOUNDATION	GTE5 FOUNDATION	GTE5 FOUNDATION
Turbine & Exhaust Systems Accessory Drives	Practical Problem Solving Exercise	Investigating Intakes & Compressors Cold End Inspection	Investigating Combustors, Turbines & Exhausts Hot End Inspection

SESSION 1	SESSION 2	SESSION 3	SESSION 4
GTE5 ADVANCED	GTE5 ADVANCED	GTE5 ADVANCED	GTE5 ADVANCED
Introduction to advanced GTE & Associated Systems. GTE Industrial Applications & Comparative Equipment	Compressor & Airflow Control.	Shafts, Bearings & Seals Combustion Chambers	Practical Problem Solving Exercise

SESSION 1	SESSION 2	SESSION 3	SESSION 4
GTE5 ADVANCED	GTE5 ADVANCED	GTE5 ADVANCED	GTE5 ADVANCED

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Fuel System - Overview	Fuel System - Control	Lubrication System	Turbine Internal Air System

SESSION 1	SESSION 2	SESSION 3	SESSION 4
GTE5 ADVANCED	GTE5 ADVANCED	GTE5 ADVANCED	GTE5 ADVANCED
Exhaust Power Take Off Systems Accessory Drives	Performance, Control & Testing	Condition Monitoring	Program conclusion and review

Dates available on request

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