



المركز العالمي للتدريب والتطوير
International Centre For Training & Development



ME162

Rotating Equipment Reliability Optimization & Continuous Improvement



ACTVET
Abu Dhabi Centre for
Technical and Vocational
Education and Training
مركز أبوظبي
للتعليم والتدريب
التقني والمهني

Gini GLOBAL
INNOVATION
INSTITUTE
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International Association
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Course Introduction:

Rotating equipment is essential for gas and oil processing plants. The designers as well as the operating and maintenance staff are usually confronting with major issues regarding the reliability, optimization and continues improvement of rotating equipment. The course presents the recent technological aspects in operation best practices, preventive and predictive maintenance that enhance the reliability of major rotating equipment mainly, gas turbines, pumps, blowers and fans. The course crosses the boundaries from the fundamental information to top notch in the recent technological achievement in this field.

During the course participant's discussion, comments, bringing up their own problems are welcomed and encouraged.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- Lay out the main theories of reliability, optimization and continues improvement of rotating equipment
- Obtain the advanced information in preventive as well as predictive maintenance of rotating equipment
- Present different types of rotating equipment, flow characteristics through these equipment, components performance, operational and maintenance characteristics
- Illustrate study cases for reliable operation and maintenance of different rotating equipment, mainly gas turbines, compressors, pumps, fans and blowers
- Present the advanced condition monitoring technologies stressing on vibration and ultrasonic analysis
- Present the system assisting and auxiliaries equipment such as measuring instruments and valves

Who Should Attend?

This course is intended for mechanical, chemical and electric power engineers. Also advanced operating staff of rotating equipment.

Course Outline:

Day 1:

Reliable Rotating Equipment

- Introduction to reliable rotating equipment.

- Basic fundamentals in reliability and fault analysis
- Life cost estimates for operation , maintenance and upgrading
- Applying the predictive Maintenance
- Maintenance of Bearing
- Troubleshooting premature bearing failure
- Balancing & Measuring Techniques
- Shaft Alignment: Thermal Growth
- Vibration & Ultrasound Technologies
- Reliable measuring instruments and valves

Day 2:

Rotating Equipment Case Studies

Gas Turbines

- Flow through different components as compressors, combustion chambers and turbine
- Components characteristics
- Matching of components for efficient operation and maintenance
- Improvement performance with upgrading with advanced technologies

Day 3:

Compressors

- Flow characteristics through different types of compressors
- Compressor reliable operation
- Compressor surge control
- Preventive and predictive of compressor components
- Upgrading possibilities for efficient operation
- Study cases illustrating expected operational and maintenance problems
- Condition monitoring using advanced technologies

Day 4:

Fans and Blowers

- Centrifugal Blowers, Operation & Maintenance
- Positive Displacement Blowers, Selection of Fans & Blowers, Rotary Blowers

Day 5:

Pumps

- Types, Performance and Operation

- Pumping Methods
- Specific speed and specific diameter,
- Design operating conditions,
- Pumps Control and Selection
- Pump curves and piping system curves,
- Capacity control,
- Pumps Specifications

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

