DAY 1

Gas Thermodynamics

- Gas Properties and Laws
- Centrifugal Compressor Aerodynamics - Thermodynamics
- Changes in Gas Velocity and Pressure in a Centrifugal Compressor
- Mass and Volume Flow Rate as a Function of Pressure, Temperature and Gas Composition
- Molecular Weight of Gas and its Effect on Performance
- Discharge Temperature, Power Absorbed as a Function of the Gas Composition and the Operating Conditions
- Investigating and Controlling Surge and Choke

DAY 2

Centrifugal Compressors – Design – Operation

- Overview of the Main Features of Various Types of Compressors
- Classification of Compressors based on Design and Application
- World Standards and Codes related to Compressor Design
- Main Elements of Centrifugal Compressor Construction
- Analysis of Centrifugal Compressor Efficiency
- Guidelines for Trouble-free Centrifugal Compressor Operation

DAY 3

Steam Thermodynamics

- Steam Properties and the Mollier Charts
- The Rankine Cycle
- Steam Requirement per KWH Production
- Ultra-supercritical Conditions

DAY 4

Steam Turbines – Design -Operation

- Main Elements and Technical Characteristics of Steam Turbine Design
- The Rotating and Stationary Blades

- The Internal and External Seals
- Radial and Thrust Journal Bearings
- Stop – Control – Non Return Turbine Valves
- Turbine Controls and Interlocks

DAY 5

Maintenance of Rotating Machines

- Machines Piping and Ground Regulations
- Alignment of Thermal Machines
- Balancing of Rotating Machines
- Surface Treatments of Sealing Interfaces
- Online Washing
- Troubleshooting through Vibration Analysis, Oil Analysis and Thermography