

ADVANCED DESIGN, OPERATION AND MECHANICAL ASPECT OF CENTRIFUGAL GAS COMPRESSORS (REF:OTSCGCOO 1)

Course Objective

This course aims to offer a logical approach to the design of centrifugal gas compressors, which will concentrate on the integration of the discipline experts – Process, Mechanical, Instrumentation /Control into a cohesive team

Course Description

This course aims to offer a logical approach to the design of centrifugal gas compressors, which will concentrate on the integration of the discipline experts – Process, Mechanical, Instrumentation/Control into a cohesive team. It considers the design of control & operation strategies for complex compression systems. It looks at the use of dynamic simulation studies to review and improve the design of compression systems and enables operations personnel to understand the key safety and operability issues associated with the compression system.

A compression system design will be developed during this course linking all the topics covered, including a short safety review. All individual engineering disciplines are integrated on the course to form a cohesive design team.

Who Should Attend

- Engineers involved in the design of process plant, which includes centrifugal compressors.
- Discipline Engineers – Chemical, Mechanical, Instrument, Control, Process who have knowledge of compressor design from their perspective but want to work better as a team.
- Process plant operation and supervisory staff, particularly those who liaise with project teams and have input into process designs, and are involved in commissioning.
- Project Engineers
- Engineers responsible for managing and specifying dynamic simulation studies.

Pre-Requisites

Attended “The Control & Operation of Centrifugal Gas Compressors” course (or an equivalent).

Course Outcome

At the end of this course you will be able to design a centrifugal gas compressor.

Course Outline

Day 1

Introduction
The Design Process
Thermodynamics and Compression Cycles

Day 2

Design calculations
Number of stages
Selection of machines Drivers
Principles of operation
Designs
Construction

Day 3

Configurations
Rotor Assembly
Casing / Shaft Seals
Lubrication
Condition Monitoring

Day 4

Gas Cooling
Liquid Knockout
Piping Systems
Instrumentation



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Day 5

Compressor Installation
Compressor Operations

Course Review and Feedback

