



Oil & Gas Field Operations Program 3

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Oil & Gas Field Operations

Program 3

Introduction:

Module 3 of the Oil and Gas Field Operations Series program discusses the various forms of gas compression, associated drives and principles, as well as compressor maintenance. Pump principles, types and maintenance, oilfield piping and valves and fittings are also discussed in detail.

Who Should Attend?

Petroleum Engineers, Production Engineers, Project Engineers, Field Operators, Chemical Engineers, Production Facilities Supervisors.

Course Objectives:

By the end of this course delegates will be able to:

- Explain gas compression, related prime movers and their various types and designs
- Describe compression equipment and maintenance
- Identify the types and functions of assorted valves used in the industry

- Identify pumps, pipes, and fittings used in oil gas transfer
- Define compressor valve problems and demonstrate the changing of compressor valves

Course Outline:

Introduction

Gas Compression

- Compression Introduction
- • Classification and types
- • Compressor components
- • Valves and rod packing
- • Rotary machines
- • Dynamic compressors

Principles of Compressor Operations

- • Lubrication
- • Drives and operational controls
- • Auxiliaries and stage arrangements

Compressor Engines

- • Internal combustion engines
- • Internal combustion operation and construction

Turbine Compressors

- • Gas turbines

Compressor Operations

- • Changing compressor valves
- • Starting compressors

Valves

- • Design and application
- • Standard valves
- • Specialized valves
- • Valve actuators
- • Safety valves-pressure safety devices

Pumps

- • Principles and application
- • Pump theory

Types of Pumps and Applications

- • Reciprocating pumps and injectors
- • Rotary pumps
- • Centrifugal pumps

Pump Maintenance

- • Installation and maintenance
- • Pump operations and drivers

Piping and Fittings Systems

Process Piping and Fittings

- • Piping materials and connections
- Piping expansion, support and insulation

