TECHNICAL
EDUCATION
ACADEMY

School of Engineering

COURSE PROGRAMME

000650

MECH062 - Operation and Maintenance of Rotating Compressors

Rotating compressors are the heart of many technological processes in the oil and gas industry.



Learn from the Best in the Business!

Course overview

Intermediate level

Why take this course

Rotating compressors are the heart of many technological processes in the oil and gas industry. The performance, safety, and economic efficiency of an enterprise depend on their reliable operation. However, to ensure that compressors operate without failures, deep knowledge and practical skills in their operation and maintenance are required.

In this training, you will learn about the various types of compressors, their design, and principles of operation. You will understand how all system elements interact and how they influence overall performance. The course includes detailed instructions on scheduled maintenance, diagnostics, and troubleshooting. You will gain practical skills to quickly and accurately identify and rectify problems with minimal costs.

Who it is for and how it helps

This course is designed for engineers, technicians, and operators in the oil and gas industry who are responsible for keeping equipment in excellent condition. If you are looking to improve your qualifications, enhance production performance, and prevent potential accidents, this course is for you.

What you will learn

- Understand the differences between reciprocating, screw, and centrifugal compressors
- Know the main components of the design and their functions
- Assess the advantages and disadvantages of various types of compressors depending on operating conditions
- Evaluate the impact of temperature, pressure, and volume on compressor performance
- Monitor operational parameters (pressure, temperature, flow) for optimal equipment performance
- Respond to changes in operating conditions and adapt compressor operation accordingly
- Perform regular inspections and data analysis to prevent failures
- Diagnose potential issues using vibration analysis, thermography, and other methods
- Develop and execute a scheduled maintenance plan
- Perform procedures for replacing consumables, lubricating, and cleaning components
- Troubleshoot typical faults and carry out repair work with minimal costs
- Interpret diagnostic results and make informed decisions based on them
- Optimize workflows to extend equipment life
- Reduce the risks of breakdowns and accidents through timely maintenance and diagnostics

Curriculum

Modules 01–06

01 Introduction to Compressor Installations

- Overview and purpose of compressors in the oil and gas industry
- Types of compressors: reciprocating, screw, centrifugal
- Basic principles of compressor operation

02 Design and Components of Rotating Compressors

- Main structural elements
- Important components and their functions (rotors, bearings, seals)
- Lubrication and cooling systems

03 Fundamentals of Thermodynamics and Gas Mechanics

- Basic laws of thermodynamics
- Concepts of pressure, temperature, and volume
- Gas behaviour during compression

04 Compressor Operation in Various Modes

- Compressor startup and shutdown
- Operating modes and optimal conditions
- Environmental impact on compressor operation

05 Monitoring and Control of Parameters

- Key compressor operating parameters (pressure, temperature, flow)
- Methods of monitoring and diagnosing equipment condition
- Use of modern automatic control systems

06 Scheduled Maintenance

- Types and frequency of maintenance
- Basic maintenance procedures: inspection, replacement of consumables, lubrication
- Documentation and reporting for maintenance activities

Curriculum

Modules 07

07 Diagnostics and Troubleshooting

- Main diagnostic methods (vibration analysis, thermography, ultrasound)
- Typical faults and methods for their elimination
- Practical case studies and their solutions

Joining the programme

Contact the Academy and quote course code 000650 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

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