

This course can be adapted to virtual classroom mode

Equipment Basic Maintenance

5 days
Overview

EBM-EN-A

LEVEL

Knowledge

PURPOSE

To provide in-depth knowledge related to the equipment technology and maintenance.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:
provide basic understanding of rotating machinery and static equipment installed on plants,
describe the operating principle of this equipment,
list the basic maintenance practices, and reliability criteria.

WAYS AND MEANS

Sharing of participants' best practices.
Numerous exercises.
Applications and case studies.
Visit of running plant or workshop if available.

LEARNING ASSESSMENT

Quiz.

PREREQUISITES

Provide evidence of a professional experience of at least 1 month, related to the concerned field.

Agenda

BASICS IN STATIC EQUIPMENT

1.5 d

Different types of piping valves and flanges types, valve types, safety valves and rupture discs, standards main failure modes and repairs
Distillation columns: operating principle; technology, fundamentals.
Different types of heat exchangers and vessels: technology, selection criteria.
Furnaces and boilers: operating principle; technology, control and safety features.
Tanks: different types of storage tanks: fixed and floating roof, etc.
Case studies, exercises and applications.

ROTATING EQUIPMENT

2.5 d

Centrifugal and positive displacement pumps: types, technology and selection criteria.
Centrifugal and positive displacement compressors: types, technology and selection criteria; operation.
Steam turbines and gas turbines: types, technology; operation and maintenance.
Basic machinery reliability, maintenance and troubleshooting.
Auxiliaries, lubrication and maintenance of rotating equipment.
Risks and failures dealing with these types of rotating equipment.

Preventive and corrective maintenance.
Vendor recommendations vs. operating constraints.
Case studies, exercises and applications.

MAINTENANCE GENERAL PRACTICES

1 d

Types of maintenance: preventive, corrective, condition-based.

Fundamentals of reliability analysis and improvement methods: FMECA: failure modes, effects and their criticality analysis, failure trees, Reliability Centered Maintenance (RCM).

How to use Key Performance Indicators to measure, evaluate and enhance equipment performances.