



Mechanical Engineering

Boiler Operations & Maintenance

Course Introduction

Boiler operation is difficult, particularly for contemporary boilers that are absolutely automatic. Safety, efficiency, and constant generation of steam or quandary rely upon the sleek operation of the boiler. Moreover, some jurisdictions have laws and rules on the boiler operation and boiler operators. On the opposite hand, maintenance is performed on the boilers to extend potency, guarantee safety, and forestall unscheduled shutdowns.

Manufacturer's recommendations

A maintenance program ought to be established supported the sort of boiler, history, and therefore the age of the boiler. This course has been designed to supply participants with comprehensive information of boiler operation and maintenance from the Codes and Standards based on ASME, additionally to the Manufacturer's recommendations based on Pensotti and GE Betz manuals.

Target Audience

- Automotive Engineer
- Boiler Engineer
- Ceramics Engineer
- Equipment Engineer
- High-Pressure Engineer
- Marine Engineer
- Mechanical Design Engineer
- Mechanical Engineer
- Naval Architect
- Pipeline Engineer
- Power Engineer
- Rotating Equipment Engineer
- Senior Mechanical Engineer
- Turbine Engineer

- Validation Engineer

Learning Objectives

- Fundamentals, and classifications of boilers
- Boiler auxiliaries and appurtenances
- Functions of controls and safety devices
- Requirements of boiler rooms
- Steam boiler operation
- How to complete operation log sheet
- Essential procedures relating power boiler maintenance
- How to develop and establish maintenance program for boilers
- Appropriate water treatment methods
- Causes of explosions and failures of boilers

Course Outline

- **01 DAY ONE**

Module 1: Boiler Fundamentals

- Definitions, boiler classifications
- Power boilers, heating boilers
- Water tube boilers, fire tube boilers
- Boiler codes and standards
- Jurisdictional requirements

Module 2: Boiler Auxiliaries and Appurtenances

- Air system
- Fuel system
- Steam system
- Feedwater system
- Draft system

- Blowdown system

• 02 DAY TWO

Module 3: Controls and Safety Devices

- Steam and waterside controls
- Combustion side controls
- Typical fuel trains
- Installation reports
- Control checklists

• 03 DAY THREE

Module 4: Water Treatment

- Boiler water troubles
- Deposits, corrosion
- Water analysis
- Preventing Boiler Scale Formation
- Boiler carryover
- Controlling Boiler System Corrosion
- Controlling Condensate System Corrosion
- Steam Boiler Blowdown
- Chemical used
- Water treatment methods
- Laying up of boilers

• 04 DAY FOUR

Module 5: Steam Boiler Operation

- General guidelines
- Operating personnel
- Preparation for operation
- Starting-up
- On-line operation
- Out-of-service Operation
- Operation log sheet

Module 6: Steam Boiler Maintenance

- Maintenance program
- Boiler cleaning
- Tube expansion
- Maintenance checks

- Preparing for inspection
- Maintenance log sheet
- Steam boiler repairs

• **05 DAY FIVE**

Module 7: Boiler Failures

- Overpressure
- Weakening of structures
- Furnace explosions
- Furnace implosions

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
May 19, 2025	May 23, 2025	5 days	4950.00 \$	Netherlands - Amsterdam
Aug. 25, 2025	Aug. 29, 2025	5 days	4250.00 \$	UAE - Dubai
Dec. 15, 2025	Dec. 19, 2025	5 days	4250.00 \$	UAE - Abu Dhabi