



Consulting and Training | Reach New Heights

Course Name

Certified Power Plant Operator

Sector Name

Electrical Engineering

Document Type

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Certified Power Plant Operator

Course Introduction

-

The Certified Power Plant Operator course is designed to provide professionals and aspiring operators with the technical knowledge and operational skills required to manage and operate power generation facilities safely and efficiently.

This course covers the fundamentals of power plant operations, including energy production systems, turbine operations, boiler management, generators, and electrical power generation processes. Participants will learn how power plants function and how operators maintain stable and reliable electricity production.

The program focuses on critical operational areas such as steam and gas turbines, control room operations, process monitoring, instrumentation systems, troubleshooting, and maintenance coordination. Learners will understand how to monitor plant performance, identify operational abnormalities, and respond effectively to technical issues.

A major component of the course is plant safety and compliance. Participants will study hazard identification, emergency procedures,

operational risk control, lockout/tagout systems, and industrial safety standards that support safe working environments.

The course also introduces preventive maintenance, load management, energy efficiency practices, and modern plant monitoring systems used across thermal and industrial power facilities.

This training is ideal for plant operators, technicians, maintenance personnel, engineering graduates, and professionals working in the power generation and utility sector.

By completing this course, participants will gain practical knowledge and operational confidence to support efficient plant performance, improve reliability, maintain safety standards, and contribute to stable energy production systems.

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Target Audience

- ✓ Electrical Engineers and Technicians in the Industrial Sector
- ✓ Maintenance Managers and Supervisors
- ✓ Electrical Controls Engineer
- ✓ Electrical Design Engineer
- ✓ Electrical Engineer

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Learning Objectives

- ✓ Learn basic engineering principles associated with power plants
- ✓ Grasp the operation of power plants
- ✓ Analyse power-related processes and control diagrams
- ✓ Learn about the different features of the power plant, selection criteria, and optimisation techniques
- ✓ Get acquainted with the maintenance protocols, troubleshooting procedures, and control operations of power plants
- ✓ Comprehend the power plant parameters, disturbances, and control techniques

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Course Outline

✓ DAY 01

Module 1: Fundamentals Of Mechanical & Electrical Engineering

- ✓ Sensors, actuators
- ✓ Pumps, compressors, turbines, fans, blowers
- ✓ Pneumatics and hydraulics
- ✓ Control valves and cylinders, electrical actuation
- ✓ Theory of heat transfer
- ✓ Electric generators, motors, and drives

Module 2: Gas Power Station

- ✓ Overview of gas power stations
- ✓ Fundamentals and thermodynamics
- ✓ Gas turbine components
- ✓ Construction, lubrication system, fuel system, and auxiliary systems
- ✓ Protection, control, and instrumentation
- ✓ Installation, operation, and maintenance

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Course Outline

✓ Day 02

Module 3: Thermal Power Station

- ✓ Overview of thermal power stations
- ✓ Fuel combustion and steam generation process
- ✓ Boiler auxiliary plant, operation, and controls
- ✓ Boilers and power generation
- ✓ Waste heat recovery
- ✓ Boiler emission control, maintenance, and troubleshooting

Module 4: Diesel Generator Power Station

- ✓ Power plant types and components, engine types
- ✓ Engine technology and classifications
- ✓ DG types, protection, insulation, earthing, and construction
- ✓ DG set assemblies & components
- ✓ DG plant layout
- ✓ DG operation and maintenance

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Course Outline

✓ Day 03

Module 5: Process Instrumentation & Control

- ✓ Process control fundamentals
- ✓ Measurement and control of pressure, level, flow, and heat
- ✓ Electronic controllers
- ✓ Process flow diagram (PFD), P&ID, transfer function
- ✓ Open & closed-loop controllers
- ✓ Operational amplifiers, analogue & digital controllers

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Course Outline

✓ Day 04

Module 6: Management And Organisation Of Plant Operations

- ✓ Functions and tasks of plant operations
- ✓ Operating policy
- ✓ Human resources and the qualification of personnel
- ✓ Performance objectives and standards
- ✓ Interfaces with other plant groups

Module 7: Shift Complement And Function

- ✓ Shift supervisor
- ✓ Operators
- ✓ Shift safety engineer or technical adviser
- ✓ Shift technical support personnel

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Course Outline

✓ Day 05

Module 8: Shift Routines And Operating Practices

- ✓ Shift arrangements
- ✓ Shift operations
- ✓ Shift turnover
- ✓ Availability and use of operating procedures
- ✓ Pre-job briefings
- ✓ Conduct in the control room
- ✓ Shift rounds
- ✓ Communications
- ✓ Shift records and log keeping

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Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
June 28, 2027	July 2, 2027	5 days	4250.00 \$	UAE , Abu Dhabi
March 14, 2027	March 18, 2027	5 days	4250.00 \$	KSA , Riyadh
Sept. 28, 2026	Oct. 2, 2026	5 days	4250.00 \$	UAE , Dubai
Dec. 21, 2026	Dec. 25, 2026	5 days	4950.00 \$	Singapore , Singapore

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