



ENGINEERING STAFF COLLEGE OF INDIA



Autonomous Organ of The Institution of Engineers (India)
(IMS [ISO 9001:2015, ISO 14001:2015, ISO 50001:2018, ISO 45001:2018],
ISO/IEC 17025:2017 Certified, AICTE & CEA Recognized Institution)
Old Bombay Road, Gachibowli, Hyderabad – 500 032. Telangana, India

Management and Technology Division

Hybrid (Offline & Online) Continuing Professional Development Programme on **Advancements in Centrifugal, Reciprocating and Axial Compressor Systems: Design, Operation, Maintenance and Troubleshooting**

Dates: 21 – 24 September 2026
at ESCI Campus, Hyderabad



INTRODUCTION

Compressors are indispensable components in a wide range of industries, including oil & gas, petrochemicals, refineries, power generation, fertilizers, chemicals, manufacturing, and process plants. Centrifugal, reciprocating, and axial compressors play a crucial role in ensuring efficient fluid handling, process continuity, and overall plant reliability. With continuous advancements in compressor technology and increasing emphasis on operational efficiency, reliability, and sustainability, professionals need to stay updated with the latest developments in compressor systems.

This Continuing Professional Development Programme (CPDP) is designed to provide participants with a comprehensive understanding of the design principles, operating characteristics, maintenance practices, troubleshooting techniques, and recent advancements in centrifugal, reciprocating, and axial compressor systems. The programme will also cover performance evaluation, condition monitoring, vibration analysis, predictive maintenance, energy-efficient operation, digital monitoring technologies, and reliability enhancement strategies.

The programme offers an excellent platform for engineers and maintenance professionals to interact with experienced experts and gain practical insights into industry best practices and real-world applications. It aims to strengthen participants' capabilities in improving equipment reliability, minimizing downtime, enhancing operational efficiency, optimizing maintenance strategies, and maximizing the lifecycle performance of compressor systems across diverse industrial sectors.

OBJECTIVES

The objective of the Programme are

- Understand the design and operating principles of centrifugal, reciprocating, and axial compressors.
- Enhance knowledge of compressor performance, selection, and operation.
- Learn preventive, predictive, and condition-based maintenance practices.
- Develop skills in fault diagnosis, troubleshooting, and performance optimization.
- Explore recent advancements in compressor technologies, digital monitoring, and energy efficiency.
- Adopt best practices for safe, reliable, and cost-effective compressor operation.

COURSE COVERAGE

The issues to be deliberated during the programme are:

- ✓ Fundamentals of Centrifugal, Reciprocating, and Axial Compressor Systems
- ✓ Design, Selection, and Performance Characteristics of Compressors
- ✓ Operation, Control, and Performance Evaluation of Compressor Systems
- ✓ Maintenance Strategies and Reliability Improvement
- ✓ Condition Monitoring and Performance Diagnostics
- ✓ Troubleshooting and Failure Analysis of Compressor Systems
- ✓ Energy Efficiency and Performance Optimization
- ✓ Recent Advancements in Compressor Technologies and Digital Solutions
- ✓ Safety Practices, Standards, and Asset Management
- ✓ Industrial Case Studies and Best Practices

METHODOLOGY

Methodology of the programme includes class room Sessions with Lecture/discussion with audio visual aid, bench marked practices if any, video shows, Chalk & Talk sessions, group discussions, case studies, debates, sharing of experiences, etc. All the sessions will be interactive demanding active participation from all the members. Case Method of Instructions will be the main method of knowledge facilitation.

TARGET PARTICIPANTS

Senior & Middle Level Engineers, Executives, Managers and Quality Assurance Executives, Scientists, responsible for maintenance & operation of equipment/systems pertaining to Power plants, Refineries, Fertilizers, Pharmaceuticals, Railways, Power Plants, Nuclear Industries Chemical Engineering set ups, Navy, Army Air force, Production and Manufacturing set ups. In addition, faculty from academic institutions will also be benefitted by the course. Defence Establishments like Dockyards, Base Repair Depots, EME Workshops will find it very useful, leading them to excel in their performance.

BENEFIT TO THE PARTICIPANTS

Participants will gain a comprehensive understanding of the design, operation, maintenance, and troubleshooting of centrifugal, reciprocating, and axial compressor systems. They will acquire practical knowledge to improve equipment reliability, optimize performance, enhance energy efficiency, and minimize unplanned downtime through effective maintenance and condition monitoring practices. The programme will also provide insights into the latest technological advancements and industry best practices, enabling participants to enhance the safety, efficiency, and lifecycle performance of compressor systems in their organizations.

FACULTY

Faculty consists of experts from Centrifugal Pumps and Compressors manufacturing industry and connected research establishments besides that from ESCI.

PROGRAMME DIRECTOR

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PROGRAMME DATES & TIMINGS

Dates: 21 – 24 September 2026

Timings: On the first day Registration will commence at **09:00 Hrs**. On all other days the programme timings will be from **09:45-17:15 Hrs** with breaks in between for tea and lunch.

COURSE FEE: **Rs. 22,000/- (Rupees Twenty Two Thousand only)** per Participant + GST@18% Extra. Fee includes, course material, course kit, twin-sharing/single AC accommodation as per availability, breakfast, lunch, dinner, tea / coffee and snacks during the actual days of training programme.

Online: WebEx platform

Rs. 14,000 /- (Rupees Fourteen Thousand only) per participant + GST@18% Extra.

PAN Card No AAATT3439Q; GST No. 36AAATT3439Q1ZV. H.S. No. 999293 (Under commercial training or coaching services – clause 65(105) (ZZC) of Finance act – 1994).

Programme fee is to be paid in in favor of **“THE INSTITUTION OF ENGINEERS (INDIA) – ENGINEERING STAFF COLLEGE OF INDIA”** in the form of demand draft payable at Hyderabad. Alternatively, the payment may be made by Electronic Fund Transfer (EFT) to ESCI - **SB A/c No.0432104000039631 with The IDBI Bank Ltd., Gachibowli Branch, Plot No. 2-53/2, JNIBF, IIIT Junction, Gachibowli, Hyderabad-500032 by RTG's/ NIFT / IFSC Code No: IBKL0000432**. While using EFT method of payment, please ensure to communicate us your company name, our Invoice reference and programme title.

CERTIFICATION

A Certificate of participation will be awarded to each participant on conclusion of the programme.

GENERAL INSTRUCTIONS

- ESCI encourages participants to present case studies from their respective organizations.
- ESCI provides complimentary accommodation and boarding to the participants one day before commencement (Check-in 1200 h) and one day after conclusion (Check-out 1200 h) of the programme duration. Overstay charges will be applicable as per ESCI rules (subject to availability of accommodation).
- Well-developed Information Centre and Internet facilities are available to the participants free of cost.