ENGINEERING STAFF COLLEGE OF INDIA (ESCI)

(An ISO 9001:2015 Certified, AICTE & CEA Recognized Institution)

Autonomous Organ of the Institution of Engineers (India)

Old Bombay Road, Gachibowli, Hyderabad – 500 032. Telangana, India

Design Prototyping Centre& Mechanical Division (DPC –MD)

Organizing

Continuing Professional Development Programme on
Metallurgy for QC and Design engineers

07 - 10 December 2026

INTRODUCTION

Metallurgy provides QC and design engineers with critical knowledge of metal properties, behavior, and processing to support material selection, optimized design, quality testing, performance prediction, and failure analysis. This expertise is vital for ensuring product reliability, quality assurance, and fostering innovation.

Engineering components are tested at various stages to assess structural integrity and suitability for real-world applications. Such testing helps evaluate material behavior under diverse operating conditions, ensuring long-term performance, safety, and effective life cycle management.

OBJECTIVES

The objectives of the programme are:

- To impart knowledge of metallurgical quality principles, processes, and testing methods (chemical, mechanical, metallographic, and non-destructive).
- To introduce laboratory-scale heat treatments and familiarize participants with industry standards and specifications in material testing.
- To develop awareness of testing equipment, sampling techniques, and the practical importance of material testing through case studies.
- To provide insights into failure analysis methods and evaluate quality cost implications for effective decision-making.

COURSE CONTENT

The following topics will be covered during the training programme:

- Quality control checkpoints for incoming, intermediate, and final inspection processes in manufacturing.
- Preparation of Quality Assurance (QA) plans and quality matrices.
- Sampling techniques, test procedures, and laboratory-scale heat treatment of samples.
- Fundamentals, equipment, and types of testing methods in chemical, mechanical, and metallography, with emphasis on strategic tests such as fatigue, fracture, and creep.
- Non-destructive testing (NDT) methods for metallurgical products.
- Corrosion testing – standards, methods, and measurement techniques.
- Interpretation of test results, data analysis, validation, and documentation (Certificates of Conformance).
- Overview of key national and international standards (ASTM, AMS, BS, IS, etc.).
- Critical control parameters in material testing.
- Approaches and methodologies for failure analysis.

METHODOLOGY

Methodology of the programme includes Chalk & Talk sessions /lectures/group discussions/case studies/debates with audio-visual aid, benched marked video shows etc. All the sessions will be interactive demanding active participation from all the member participants.

TARGET PARTICIPANTS

Professionals from Governments, Private and Public Sector Undertakings (from Design, Prototyping, Development, Service & Maintenance Divisions), Scientists working in Research Laboratories& Faculties of various Colleges & Universities, Startups into New product development, Dockyard personnel and repair shop personnel will find the programme useful.

CERTIFICATION

A Certificate of participation will be awarded to all the participants after the successful completion of the training programme.

COURSE ADVISOR & RESOURCE PERSON

Shri. G.V.R Murty
Former General Manager - MIDHANI (Min. Of Defence)
Advisor -DPC-ESCI

COURSE DIRECTOR

Dr. N V S S Sagar
Faculty & Head i/c,
Design Prototyping Center and Mechanical Division
Engineering Staff College of India,
Gachibowli, Hyderabad.
Email: dpc@escihyd.org
Contact No.: 9052291738 or 040 – 66304186

COURSE COORDINATOR

Mr. Aliga Raju
Faculty
Design Prototyping Center and Mechanical Division
Engineering Staff College of India,
Gachibowli, Hyderabad.
Email: dpc@escihyd.org
Contact No.: 9908689758 or 040 – 66304184

PROGRAMME DATES: 07 – 10 December 2026

COURSE FEE: Rs. 24,000/- (Rupees Twenty Four Thousands 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.

DISCOUNT:

Additional 10% discount for three or more participants*, if sponsored by the same organization. s*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 (DD) payable at Hyderabad. Alternatively, the payment may be made by Electronic Fund Transfer (EFT) to ESCI - SB A/c No. **10007111201** with **State Bank of India**, P.B.B / Khairatabad, Rajbhavan Road, Hyderabad-500004 by RTG's/ NIFT / **IFSC Code No: SBIN0004159**. While using EFT method of payment, please ensure to communicate us your company name, our Invoice reference and programme title.

REGISTRATION:

To register, please send your nominations by providing name, designation, contact address, email address, mobile no, telephone and fax number of the participant along with the details of mode of payment of fee, addressed to: dpc@escihyd.org/mechanical-dpc@escihyd.org. For more details please contact our Course Coordinator, Mr. Aliga Raju - 9908689758 or 040 – 66304184

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 12:00 h) and one day after conclusion (Check-out 12:00 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.