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

Design Prototyping Centre & Mechanical Division

Continuing Professional Development Programme on

Surface Engineering – Concepts, applications and emerging technologies

Dates: 18th – 21st March 2025

At ESCI Campus, Hyderabad

INTRODUCTION

Many engineering components which are exposed to the environment are directly affected by corrosion and surfaces also suffer from wear, fatigue, and friction forces. It is imperative to provide some mechanisms so that the surfaces are protected and their properties are protected and enable them to withstand these failure mechanisms. In certain circumstances it can be more cost effective to have a specially engineered surface whilst leaving the bulk (or substrate) alone. Surface engineering provides unique ways to alter the surface and near surface regions of materials, resulting in significantly improved surface sensitive properties. Surface engineering is a wide ranging discipline and covers the chemical and physical modification of surfaces, the design and application of surface coatings, solid lubricant films, coating and thin film properties, measurement techniques, coating testing, and surface treatment selection.

OBJECTIVES

The objectives of the programme are: -

- To bring awareness of the importance of surface engineering.
- Introduction to various types of corrosion processes.
- To know the various types of failures due to neglect of surface protection.
- To understand the concept of friction and lubrication of surfaces
- To have knowledge of thin films, coatings, surface modification methods.
- To understand the various types of surface protection methods.
- Advances and case studies in surface engineering.

COURSE COVERAGE

The following topics will be deliberated during the training programme:

- Corrosion –Types, Analysis, Quantification, Prevention
- Surface engineering and Tribology.
- Surface modification techniques
- Surface coatings for product reliability and durability.
- Paints - Types, Concepts, Processes, Applications
- Advances in surface and coating processes
- Selection of materials for oil, chemical, gas, naval sectors
- Case studies- Failures and corrective actions

METHODOLOGY

Methodology of the programme includes classroom Sessions with Lecture/discussion with audio-visual aid, benched marked 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. CMI will be the main method of instruction.

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 DIRECTOR

Dr. N V S S Sagar
Faculty
Design Prototyping Center and Mechanical Division
Engineering Staff College of India
Gachibowli, Hyderabad.
Email: mechanical-dpc@escihyd.org, Contact No.: 040-66304184

PROGRAMME DATES: **18 – 21 March, 2025**

COURSE FEE: **Rs. 22,500/-** (Rupees Twenty Two Thousand Five Hundred 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.* sPAN 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 program assistant, Ms Sameera, Mobile No: 7416 409 119.

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.