



ENGINEERING STAFF COLLEGE OF INDIA (ESCI)

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 (DPC-MD)

Organizing

Continuing Professional Development Programme on

Ferrous and nonferrous castings: Defects & Rectifications

24 - 27 February, 2025

INTRODUCTION

Ferrous metals contain iron. These metals are known and valued for their tensile strength and are used in both industrial and architectural components. Ferrous metals such as steel, stainless steel, carbon steel, and cast iron give us the necessary strength and toughness to construct safe and sturdy bridges, railroads, vehicles, skyscrapers, and aerospace components. Non-ferrous metals do not contain iron, and thus, non-ferrous metals intrinsically less prone to rust and corrosion than ferrous metals. Non-ferrous metals light in weight, non-magnetic, and highly malleable with low tensile strength. They are more suitable for manufacturing of aircraft, electrical components, piping, roofing, and gutters. These metals are also valued for their exceptional heat-and-electrical conductivity and low melting point. But selections of these materials depend on certain factors. This programme intends to introduce the metal casting (Ferrous & Non-ferrous) process. Casting is an important manufacturing process. Manufacturing metal (Ferrous & Non-ferrous) products is a critical job. Therefore, it is an imperative to have a fair understanding of metal casting processes to innovate and produce quality metal products. This programme will help engineers, practitioners and technical staff to figure out broadly a typical casting facility and its process, variables, and complexities involved in producing a casting, and maintain a quality record by preempting, minimizing and rectifying the defects.

OBJECTIVES

The main objectives of the programme are:

- To provide an insight into the various types of ferrous and non-ferrous metals castings techniques.
- To provide awareness on typical defects during the processes of castings and their removal
- To evolve a platform to discuss state of the art in casting industries

COURSE COVERAGE

The following topics will be deliberated during the training programme:

- Overview of Ferrous and Non Ferrous Metals and their applications
- Factors that govern the selection of metals (Ferrous and Non Ferrous)
- Casting design types and methodologies & their advantages
- Cast gating; pouring and shakeout methods; cleaning and finishing method;
- Quality assurance; safety and environmental regulations of castings.
- Castings failures & defects
- Prevention & removal of defects in casting
- Recent developments in Casting industries
- Case studies and discussions
- Industry visit

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

Engineers (production, maintenance, QC), Managers, Technical officers, Process planners, piping engineers and technicians working with Aerospace, Energy, Defense, and Process Industries (thermal, hydro, cement, refineries, fertilizer plants etc.) will find this programme immensely beneficial.

CERTIFICATION

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

COURSE DIRECTOR (S)

Dr. N V S S Sagar *M.Tech; Ph.D*

Faculty

Design Prototyping Center and Mechanical Division

Engineering Staff College of India

Gachibowli, Hyderabad.

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PROGRAMME DATES: 24 - 27 February, 2025

COURSE FEE: Rs. 22,500/- 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. PAN Card No **AAATT3439Q**; GST No. **36AAATT3439Q1ZV**. H.S. No. 999293 (Under commercial training or coaching services – clause 65(105) (ZCC) 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.