



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

Engineering Simulation using ANSYS & CFD

(With Hands on Experience)

24th – 27th March 2025

INTRODUCTION

Since, engineering simulation helps companies to avoid the cost of product failure; companies are investing in creating virtual simulation platforms. Big brands are driven by great products, and great products result mainly from realistic simulation. Traditionally, companies would design parts or subsystems in different engineering silos, and then subject their prototypes to physical tests at the later stage of product design. However, this physical testing will not give enough data for companies that produce smart products. Hence, virtual engineering simulation is increasingly preferred.

ANSYS has a set of modules to perform simulation of structural aspects of a single product or complex interactions of subsystems. It helps to understand how products would work not only in ideal environments but also changing user's environments or during unexpected consumer usage. ANSYS offers a suite of engineering simulation software for engineers and designers to virtually analyse how their products (and thousands of parts in them) work in real world environment, at an early stage of product design. ANSYS software is being used across a wide range of industries to analyse various performance parameters such as signal integrity, electromagnetic interference, thermal issues, and mechanical failure.

OBJECTIVES

The objectives of the programme are:

- To generate awareness on design fundamentals of ANSYS and CFD
- To develop and sharpen technical, design & simulation aptitude of the participants
- To enable the participants, understand Design & Analysis for Manufacturing
- To discuss the various issues that the participants face every day in Design Analysis and capacitate them with error correction and problem solving skills

COURSE CONTENT

The following topics will be covered during the training programme:

- Introduction to ANSYS
- FEA & ANSYS
- Modeling and Meshing
- Introduction to Structural analysis
- Types of Structural analysis
- Introduction to Thermal analysis
- Types of Thermal analysis
- Hands on experience on Structural and Thermal Analysis
- Introduction to CFD
- Mathematics behind CFD
- Meshing using ICEM CFD
- Solving CFD problems using ANSYS
- Case studies

Centre for Promotion of Professional Excellence

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 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: 24 – 27 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.