Manufacturing Technology Training
An IMTMA initiative

Finite Element Methods(FEM) for Structural Design - How and Why?
Date : 10 to 12 March, 2026
Venue : IMTMA Technology Centre, Bengaluru

INTRODUCTION

Increasing focus on reduction of cost, weight and development time of structures with improved performance of structures necessitates use of computer-aided design and analysis tools. Finite Element Analysis is a methodology that helps engineers in this area. In this methodology, a mathematical model of physical behaviour of a phenomenon is created and is packaged in a software, leaving only the job of creating the geometric model and initial/boundary conditions for the phenomenon to the user. This activity, unless done with proper understanding of how the input data is used to create mathematical model, can lead to totally incorrect results. For effective use of the software, users' understanding of how the mathematical model is created and how various inputs affect its accuracy is of prime importance.

To provide this insight to the designers/analysts, Indian Machine Tool Manufacturers' Association is organizing a training programme on **"Finite Element Methods (FEM) for structural design-How and Why?"**

FOCUS AREAS

- Mechanics and Structural Design
- Simplifying the complex – FEM
- Analysis Steps
- Element Stiffness, Element Library
- Nodal Loads
- Boundary Conditions
- Modelling Decisions
- Model Validation
- Result Review
- Result Presentation
- Extension to Dynamic Analysis

KEY TAKE AWAYS

After undergoing the programme, the participants will be able to:-

- Understand the mechanics and methodology involved in structural design
- Understand how this methodology is encapsulated in Finite element Software
- Know how FE modeling decisions affect the accuracy of the model
- Know how to validate the model and interpret and present results

PARTICIPATION FEE

Rs. 6999/-
+18% GST
IMTMA Members/ Micro Companies/ Individuals/ Educational Institutions / Students/ IMTMA Non Members/ Others

USD 280/-
Overseas Participants

Group Concession : 10% for 3 to 5 and 20% for 6 and more delegates being nominated from the same company

PARTICIPANT PROFILE

This programme will benefit Design and Development Engineers who need to analyse complex structures of new or existing structures, for improved and efficient structural performance.

The programme will be highly interactive where participants can raise questions and solicit feedback from the faculty.

FACULTY

This programme will be conducted by **Dr. V Bharat,**

Dr. V Bharat is a Mechanical engineer, with a post-graduation in CAD-CAM and has completed his PhD with a specialization in Powder metallurgy. He is currently working as Associate professor, with Global Academy of Technology, Bangalore. He has an overall academic experience of over 16 years. He has published several papers and conducted a number of workshops on Mechanical engineering related topics.

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REGISTRATION : Prior registration for participation is necessary. Number of participants is limited and will be accepted on 'First Come First Serve' basis. A Certificate of participation will be issued to participants.
Important Information : Participation fee includes, course material, working lunch and tea / coffee. Interested companies are requested to register online by clicking on 'REGISTER' button and by filling up the nomination authority and participant's details in specified form.