

Hands on Training on "Machine Tool Design - Special Purpose Machine (SPM)"

Date: 10 November, 2025 to 5 January, 2026 Venue : IMTMA Technology Centre, Bengaluru

Last date for registration 03 November 2025

Early Bird Offer: Avail 10% concession by registering and paying online on or before 26 October 2025

INTRODUCTION

Design engineering is one of the key functions in any product manufacturing industry. The solution in physical entity or form for any problem would be a reason for the development of products. Visualizing the product shape, kinematics, motions, selection of critical mechanical elements, optimization for cost, material, reliability, manufacturing, and assembly are the key skills for any machine designer. To become a successful designer, he needs to have a complete knowledge on manufacturing activities includes, including process, production, quality, assembly, and testing. In view of this, IMTMA Design Institute is organizing a comprehensive and hands-on training programme on Machine Tool Design - Special Purpose Machine for young engineers and fresh hires.

FOCUS AREAS

- Training on CAD SOLIDWORKS
- Hands-on training Manufacturing drawings and practice
- Tolerance and GD&T what why and how
- Engineering basics SOM and EM Refreshing from designer's point
- Kinematics of Machines A refreshing from designer's point
- Introduction to CNC machines GPM and SPM
- Cutting tools and selection
- Engineering materials Insight and selection
- Design of metal cutting Special Purpose Machine Project
- Overall design concept, Machine specification
- Design of Spindle for milling
- Design of Linear servo slide & Hydraulic Slides
- Selection of Ball screw and LM Guides
- Selection Anti-friction bearings
- · Selection of motors
- Hydraulics and pneumatics
- · Design evaluation for bearing life, spindle stiffness, critical speed and inertia
- Introduction to Electronics and Electrical for Mechanical
- Design of machine structure
- Overview on coolant system and lubrication system
- Hands-on Experience on FEA Tool
- **Industry Visits**

KEY TAKE AWAYS

- Confidence in Machine Design
- Confidence in Manufacturing drawings par industry
- Design thinking

- Knowledge in systematic design approach

- Core Placement across manufacturing industries

Facilities

- Advanced CAD Laboratory & Digital Classroom
- AUTOCAD, INVENTOR, SOLIDWORKS, CREO & ANSYS, Eplan, Camworks
- Hands-on experience for solid modeling, FEA
- Mechanical laboratory for the demo of in-use machine systems
- Complete Design Project as an exercise
- Hydraulic And Pneumatic Teaching Modules • Real-time CNC Machine tools for demo
- Functional CNC Lathe and Machining Centres for demonstration

PARTICIPATION FEE

Rs. 65000/-+18% GST IMTMA Members/ Micro Companies

Rs. 50000/-Individuals

Rs. 75000/-+18% GST **IMTMA Non Members/ Others**

USD 3000/-Overseas Participants

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

For Registration Contact **B.L Patil**

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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

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