Manufacturing Technology Training
An IMTMA initiative

Hands-on Training on "Design and Manufacturing Special Purpose Machine"

Date : 10 July to 4 September, 2023
Venue : IMTMA Technology Centre, Pune

Last date for registration 03 July 2023

INTRODUCTION

The course is structured with introduction to Design fundamentals and more focused on machine tool design. A complete design of CNC Turning center will be carried out from concept to finish. Pre-process activities like design input, conceptualization, machine specification, 3D modeling of parts, sub-assemblies and final assembly using popular design CAD tools and preparing the final manufacturing drawings in par with industry standards, Design for Accuracy, Design for Manufacturing and Design for Assembly will be addressed during the course. It will be highly interactive and hands on training session and covers entire 360° view on machine tool design aspects.

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
- Speaking, writing and presenting skills – To be a Smart Employee
- Process planning & Part manufacturing
- Introduction to CNC machines and part programming
- Metrology and Quality Control / Quality Assurance
- Industry Visits

KEY TAKE AWAYS

- Confidence in Machine Design
- Confidence in Manufacturing drawings par industry
- Intensive know-how on the design of machine elements
- Design thinking
- Problem-solving skills
- Strong in engineering basics
- Hands-on experience in Machine Tool design – GPM / SPM
- Knowledge in systematic design approach
- Technical competency for the manufacturing industry
- A Certificate of participation based on the performance
- **Core Placement** across manufacturing industries

Facilities

- Advanced CAD Laboratory & Digital Classroom
- SOLIDWORKS, Camworks, MASTERCAM, CADEM, sinuTrain, NC Guide etc.
- 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/-	Rs. 50000/-	Rs. 75000/-	USD 3000/-
+18% GST	+18% GST	+18% GST	
IMTMA Members/ Micro Companies	**Individuals**	**IMTMA Non Members/ Others**	**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

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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.