Manufacturing Technology Training
An IMTMA initiative

# Internship Training Program - Integrated Training On Machine tool Design , Production and Automation

**Date : 16 February to 16 June, 2026**
**Venue : IMTMA Technology Centre, Bengaluru**

**Last date for registration 09 February 2026**

## INTRODUCTION

Design engineering, production, and automation form the backbone of modern manufacturing industries. This internship program is designed to make engineering students and fresh graduates industry-ready by providing a holistic understanding of how a concept evolves from an idea to a finished product. The training focuses on product visualization, interpretation of production drawings, process planning, selection of tools and fixtures, CNC programming and operation, and quality control practices.

Participants will gain hands-on exposure to CNC machines, CAD/CAM systems, measuring instruments, and shop-floor practices, enabling them to understand real-time manufacturing challenges related to cost, quality, reliability, safety, and delivery. In addition, the program introduces industrial and machine automation, covering working principles and applications essential for today's intelligent and digitally driven manufacturing environments.

This internship is ideally suited for engineering students, diploma holders from Mechanical, Electrical, Electronics, Mechatronics, and allied disciplines, equipping them with practical skills and industry-relevant knowledge required for successful careers in manufacturing and automation.

## FOCUS AREAS

1. **Advanced Mechanical Design & CAD**

Hands-on training in SOLIDWORKS, manufacturing drawings, GD&T, tolerances, and design best practices aligned with industry standards.

2. **Machine Tool & SPM Design**

End-to-end exposure to Special Purpose Machine (SPM) design, including spindle design, linear motion systems, bearings, ball screws, motors, machine structures, and performance evaluation.

3. **Manufacturing & CNC Technologies**

Practical experience in conventional and CNC machining, CNC programming, cutting tools, fixturing, process planning, and real shop-floor practices.

4. **Materials, Metrology & Quality**

Understanding engineering materials, heat treatment, dimensional & geometric metrology, inspection methods, SPC, and quality control techniques.

5. **Hydraulics, Pneumatics & Motion Control**

Design and implementation of hydraulic, pneumatic, electro-pneumatic, and servo systems, including simulations and hands-on practice.

6. **Electrical, Electronics & Industrial Automation**

Fundamentals of electrical & electronics engineering, PLC programming (Siemens & Mitsubishi), sensors, HMI, VFDs, motors, drives, and industrial automation.

7. **Industry 4.0, Robotics & Smart Manufacturing**

Introduction to Industry 4.0, robotics, CNC–robot interfacing, automation simulations, and modular production systems.

8. **CAE, Simulation & Digital Tools**

Hands-on exposure to FEA tools, automation simulation software, and digital engineering methodologies.

9. **Project-Based Learning & Industry Exposure**

Real-time projects covering the complete journey from drawing to finished part, industry visits, practical assessments, and viva.

10. **Professional & Soft Skills**

Training in communication, presentation skills, email etiquette, teamwork, and workplace readiness.

## KEY TAKE AWAYS

- Strong confidence to build a career in manufacturing, production, and machine design
- Ability to create industry-standard manufacturing drawings
- In-depth understanding of machine elements, production systems, and automation components
- Strong foundation in engineering basics and systematic design/manufacturing approaches
- Enhanced design thinking and structured problem-solving skills
- Hands-on exposure to:
  - Machine Tool Design (GPM / SPM)
  - CNC Turning and Machining Centres
  - Measuring and inspection instruments
  - PLC hardware, programming, and machine interfacing
  - Hydraulics, pneumatics, sensors, and control systems
- Practical knowledge in:
  - Automation project execution (BOM, circuits, ladder logic, documentation)
  - Drive parameterization, commissioning, and troubleshooting
  - Virtual commissioning and Digital Twin concepts
- Clear understanding of Industry 4.0 implementation in manufacturing
- Improved technical competency aligned with manufacturing industry needs
- Performance-based certification upon successful completion
- Placement support across core manufacturing industries

## PARTICIPATION FEE

**Rs. 25000/-**
+18% GST


## For Registration Contact

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## Contact Address

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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.