

## INTRODUCTION

Our engineers fresh from college are strong on theory, but do not have requisite practical knowledge that is necessary to contribute to the organisations that they join. From interpreting manufacturing drawings to processing parts on CNC machines to measuring them and getting used to factory discipline and working environment, fresh engineers need to acquire these skill sets in the shortest possible time.

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA) is organizing an exclusive hands on course “Finishing school in Production Engineering” at IMTMA Technology Centre, Pune to enhance skill sets of engineers and supervisors from manufacturing industries. This course is of 6 weeks duration and is totally practical oriented with Hands on practice in production CNC machines, CAD/CAM, Metrology equipment, Tooling and work holding systems and other accessories.

Engineers from **TVS Motors, Maruti Suzuki, Hero Moto Corp, Sansera Engineering, Wabco India, Leo fasteners, Kar Mobiles**, to name a few companies, have undergone this course and achieved Productivity and Quality improvement in their projects by implementing some of the key learnings. This course is tailored for new recruits / trainees as well as fresh engineering graduates in Mechanical engineering and allied branches, aspiring for challenging career in manufacturing industries.

## FOCUS AREAS

- **Manufacturing Drawing including Interpretation**
- **Limits, Fits, Tolerances, GD&T, Surface Roughness: Importance in manufacturing**
- Various Machining processes and cutting parameters
- **Dimensional Metrology and Measuring Instruments**
- Types of engineering materials, properties, and Heat treatment processes
- **Process Planning for manufacturing**
- Work holding and Fixturing
- Cutting Tools and Tool Holders for various metal cutting processes
- **Hands-on practice in CNC Turning and Machining centres**
- CNC Programming: Basics and advanced
- Dimensional and Geometric Tolerances: Measurement & Quality Control
- Hands-on practice in measuring instruments
- Hands-on practice in Tooling, Work Holding, and other accessories
- Introduction to sheet metal forming processes
- **Introduction to statistical process control (SPC)**
- **5S concepts and Autonomous Maintenance (JH) - one of the main pillars in TPM**
- **Soft skills development**
- Presentation Skills, E-mail etiquettes
- **Project work: complete procedure for converting a DRAWING to PART**
- **Assessment through the presentation, test, viva, and practical's**

## KEY TAKE AWAYS

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

- Comprehensive Hands-on knowledge on production to despatch
- Gain of Confidence and competitiveness to be a successful production engineer
- Exponential career growth in manufacturing industries
- In-depth understanding of CNC machines and their aggregates
- Thorough knowledge of CNC programming and its optimization for higher productivity
- Confident to take right decisions on machines, processes, tools, and fixtures based on process planning
- Collaborative working skills with people, machines, and process
- A complete insight into Computer Integrated modern Manufacturing environment
- Ability to develop process plan for machined parts
- Practical inputs about the selection of tools & cutting parameters for various CNC machining operations
- Practice in Measuring instruments and equipment for quality control of parts
- Understanding of Sheet metal forming processes & operations, Press Tools, Presses

## Training Methodology

- Training in Modern manufacturing set up with CNC machines, CAD/CAM/CAE,VMM and CMM
- Learning by Doing: Blend of Classroom (40%) and practical sessions (60%)
- Exercises in Manufacturing Drawing, Process Planning, Tooling, and Fixturing
- Hands-on training sessions in CNC Turning & Vertical Machining Centres
- CNC Programming using Simulation of FANUC and SIEMENS control systems.
- Project work with real-time machining of components in CNC machines
- Hands-on practice in various measuring instruments used in the production shop
- Presentation / Exercises to acquire the necessary Soft skills
- Weekly Assignments and Tests
- Mock interviews with preparation for placement interviews
- Final evaluation and certification

## Facilities

IMTMA Technology Centre at Chinchwad, Pune is equipped with state of the art training facilities viz.

- Modern Manufacturing set up with CNC machines, CAD/CAM/CAE and accessories
- CNC Vertical Machining Centre & CNC Turning Centre
- CNC Simulators for FANUC and SIEMENS controllers
- Mechanical Press, Hydraulic Press and Complete set of Dies - Blanking, Forming ,Cam Piercing and checking Fixture
- Rotary Swaging Machine and Demo dies
- Advanced Laser Marking Machine
- Metrology Lab with common measuring instruments, digital height gauge, profile projector, roundness tester, Vision Measuring Machine and CMM
- Surface roughness tester
- Accessories: Tool pre setter, Touch probes, Tool Holders and Zero point clamping systems and Electromagnetic clamping systems
- Latest types of cutting tools and work holding systems
- CAM Programming: Cadem and Mastercam CAD/CAM Softwares
- Digital Network Classroom with computer work stations

## PARTICIPATION FEE

**Rs. 54000/-**  
+18% GST

IMTMA Members/ Micro Companies/  
IMTMA Non Members/ Others

**Rs. 36000/-**  
+18% GST

Individuals

**USD 2160/-**

Overseas Participants

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

## Participant Profile

- **Engineers/supervisors from manufacturing industries, responsible for productivity and quality improvement.**
- New recruits/trainees in manufacturing industries.
- **Fresh Mechanical Engineers after completion of their Degree / Diploma in Mechanical or allied disciplines.**
- Pre-final year engineering students from Mechanical or allied disciplines.
- **Design engineers who are willing to have a strong foundation through hands-on training in the latest manufacturing practices.**

### 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.