



IMTMA Design Institute

IMTMA Training Initiative



**Carving Careers in
Machine Tool Design**



IMTMA Technology Centre

Indian Machine Tool Manufacturers' Association

www.imtma.in

Machine Tool Design Skill Powered by Technovation

Need of the Metal Working Industry

Indian Machine Tool Manufacturers' Association - 'IMTMA' has been spearheading the Machine Tool Revolution in India. It has witnessed the increasing sophistication of Indian machines in its various international forums, summits and expos organized for the benefit of the machine tool industry. The rapid growth and emergence of new shining stars on the Indian Machine Tool panorama has created the need for a new breed of machine designers. Designers whose machines stand abreast with pride along with the designs of established international machine tool manufacturers. Designers, with a systematic approach; who are equipped with a 360 degree view - from the fundamentals to the finished machine design. IMTMA's interactions at various levels paint a grey picture that Indian Industry is currently staring at a glaring lacuna as India does not have any industry body or institute that offers a comprehensive course that can churn out systematic designers who are plug-and-play ready from the first day.

IMTMA Design Institute

IMTMA has taken a positive initiative in providing state of the art facilities and industrial expertise to establish a high-end Design Institute for the cause of moulding fresh engineers into specialized machine tool designers. The IMTMA Design Institute aims to extend the training programmes to the machine tool and other companies for the benefit of training their fresh hires and nominated individuals into productive and highly efficient machine tool designers.

Unmatched Industry Focus

- Reducing the Learning Curve for Freshly Hired Engineers
- Encompassing Systematic Design Approach
- Focused for Higher Productivity and Efficiency
- Sharing of Industry wide practices
- Enabling experience on latest Technology and Machinery
- Design for Safety
- Focusing on Aesthetics & Ergonomics Appeal

State-of-Art Facilities with Training Excellence

- Advanced CAD lab and A/V class rooms.
- Independent computer systems with 3D & 2D latest design tools.
- Experienced Industry professionals as faculty.
- Updated Machine Design Curriculum blended with latest Design trends.
- Hands-on experience on Solid modeling, FEA, Design calculations and design validations.
- Mechanical laboratory for demo of in-use machine systems.
- Real life 'machine carcasses' of CNC Lathe and Machining Centers.
- Functional CNC Lathe and Machining Centers for demonstration.
- SIEMENS AND FANUC Program simulation kits.
- Hydraulic and Pneumatic Kits.
- Measuring Instruments Lab (Manual & Digital).
- Tool Holders & Cutting Tools repository.
- Technical library and other resources.
- IMTMA certification.



► For registrations and demonstration sessions please contact ; www.imtmatraining.in ; design.institute@imtma.in

Machine Tool Designer

The Machine Tool Design Engineer is distinguished from the designer/drafter by virtue of the fact that a design engineer takes care of the total system as well as inner workings/engineering of the machine tool. While industrial designers may be responsible for the conceptual aesthetic and ergonomic aspects of a design, the design engineer usually works with a team of engineers and designers to develop the conceptual, preliminary and detail design and the most critical parts. He/she may work with industrial designers and marketing personnel to develop the product concept and specifications and he/she may direct the design effort from that point. IMTMA represents 90% of the organized Machine Tool Industry with over 470 members benefiting from this endeavour to train and make available a talent pool of certified machine tool designers.

Machine Tool Design

All the training programmes offered by IMTMA Design Institute are structured very systematically to provide the participants an in-depth knowledge in the subject of machine tool design and an orientation of the entire Machine Tool Industry. This is complimented by hands-on group projects that emphasize the development of practical design skills of the candidates. Experienced design faculty with ample industry experience guide the participants and enable them to achieve highest standards of professional expertise. The individual courses also incorporate visits to machine tool industries to expose all facets of machine tool designing and practical applications. The well researched curriculum is endorsed by subject matter experts and offers an entire range of topics covering the subject of Machine Tool Design as required by the industry.



MACHINE TOOL DESIGN - PROFESSIONAL

[MTD-1001]

DURATION : 10 WEEKS

Course Schedule : August

FEE :
IMTMA MEMBERS: INR 50,000
OTHER COMPANIES: INR 60,000
INDIVIDUALS: INR 35,000
(+ 12.36% Service tax)

INTRODUCTION

This comprehensive course is structured from basic to advance level of topics dealing in machine tool design. A complete design of CNC lathe or machining center is carried out from scratch to finish. Pre-process activities like design input, conceptualization, 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 360deg view on machine tool design aspects.

COURSE MODULES

- Machine design fundamentals
- Design of machine elements
- Introduction to CNC machine tools
- Engineering materials and heat treatment
- CAD Tools training – SOILDWORKS OR PTC-CREO
- Drafting of machining drawings
- Complete machine design exercise of CNC lathe or VMC
- Design of hydraulic and pneumatics for machine tools
- Design of Lubrication and coolant system
- Introduction to CNC system
- Manufacturing process & Assembly techniques
- Design of quality documents
- Machine tool testing and calibration
- Industrial design

ELIGIBILITY

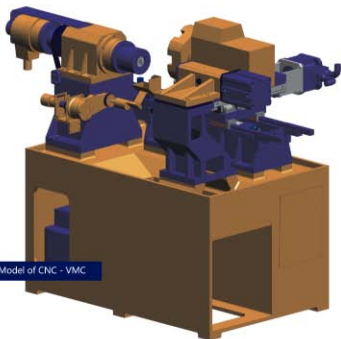
- FRESH ENGINEERS, DIPLOMA ENGINEERS AND INDUSTRY FRESH HIR

COURSE OUTCOME

- Comprehensive Machine Design knowledge
- CNC machine tools and applications
- Hands on experience of machine tool design
- Design of hydraulic and pneumatics for machine tools
- Industrial design of machine tools

BENEFITS

- Industry orientation
- Complete knowledge on CNC machine tools and application
- Better employability
- Develops full confidence for machine design task.
- Develops 360° machine design knowledge
- Ready for plug & play from first day



Design Model of CNC - VMC

MACHINE TOOL DESIGN – RAPID

[MTD-1002]

DURATION : 6 WEEKS

Course Schedule : May | December

FEE :
IMTMA MEMBERS: INR 35,000
OTHER COMPANIES: INR 40,000
INDIVIDUALS: INR 25,000
(+ 12.36% Service tax)

INTRODUCTION

The course is structured with introduction to Design fundamentals, more focused on machine tool design. A complete design of CNC lathe or machining center will be carried out from scratch to finish. Pre-process activities like design input, conceptualization, machine specification, 3D modelling 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 360deg view on machine tool design aspects.

COURSE MODULES

- Machine design fundamentals
- Introduction to CNC machine tools
- Engineering materials and heat treatment
- CAD tool training- SOLIDWORKS OR PTC-CREO
- Drafting machining drawings
- Complete machine design exercise of CNC lathe or VMC
- Design of hydraulic for machine tools
- Design of sub systems
- Industrial design

ELIGIBILITY

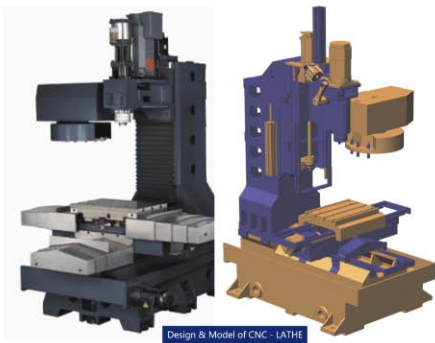
- STUDENTS, ENGINEERS AND WORKING PROFESSIONALS
(Preferably with one year experience)

COURSE OUTCOME

- Hands on experience of machine tool design
- Design of hydraulics for machine tools
- Industrial design of machine tools

BENEFITS

- Industrial orientation
- Better employability
- Develops machine design confidence
- Ready for plug & play from first day
- Complete knowledge on CNC Machine tools



Industry Speaks

IMTMA Design Institute, Bangalore is a Premium Establishment in Machine Tool Design. Associates expert in Machine Tool Industry; and highly educated lecturers are the forte of this Establishment. Excellent teaching aids, world class CAD/CAM labs with latest software & premium amenities add to the value. Engineers who have the aspiration to be the best Machine Tool designer, should select IMTMA Design Institute, Bangalore. Being a Student of 1st Batch of such imperial institute, I personally feel proud & honoured.

- **Kaustubh D Samak, Head – Design MTD, TAL Manufacturing Solutions Ltd. (A TATA Enterprise)**

"The design program is very crucial for development of a competent design person. The program ensures that the trainees are exposed to a step by step approach to design of a machine tool right from basics. The faculty members are highly accomplished designers both from the institute and practicing designers from the industry". With warm regards and best of luck.

- **Mr. Shrinivas Shirgurkar, CEO, Ace Designers, Bangalore**

"Machine tool design training is very essential for fresh engineers to orient them towards the manufacturing industry. Training conceived by IMTMA provides basic design knowledge to work on or develop not only Machinetools but also any mechanical equipment involving motion. The trained engineers will be highly employable & if already employed, will become more versatile. I am sure, " the training will enrich Human Resource of the industry and thereby enhance productivity & profitability"

- **Mr. S.Sivasubramanian, CEO, LEX TECHNOAID.**

MACHINE TOOL DESIGN – ELECTRONICS

[MTD-1003]

DURATION : 2 WEEKS

Course Schedule : April | July | November

FEE :
IMTMA MEMBERS: INR 15,000
OTHER COMPANIES: INR 20,000
INDIVIDUALS: INR 12,000
(+ 12.36% Service tax)

INTRODUCTION

This course is structured for electrical & electronics engineers for machine tool design. Introduction to Design basics, electrical elements and more focused on machine tool electrical design. A complete design of CNC lathe or machining center will be carried out from scratch to finish. Electrical circuit design, control panel design, PLC programming, ladder diagram, selection of electrical switch gears will be prominently discussed during the course. Selection of CNC system, motors and drives, machine data entry for machine customization, machine programming will be a hands-on experience during the course with design exercise.

COURSE MODULES

- Machine design fundamentals
- Introduction to CNC machine tools
- Design inputs collection
- Power requirement calculation
- CNC Controller selection for the machine
- Selection of Motor and drives
- Electrical switch gear elements
- PLC Design and programming
- Fundamentals of Electrical circuit design
- Exercise on circuit design
- Design of Electrical Panel / Cabinet / Operator pendant.
- Machine Interfacing & Commissioning
- Design exercise for a complete machine

ELIGIBILITY

- STUDENTS, FRESH ENGINEERS, DIPLOMA ENGINEERS with or without experience

COURSE OUTCOME

- Hands on experience of machine tool electrical design
- Design of PLC and Programming
- Electrical circuit design
- Machine interfacing and commissioning

BENEFITS

- Better employability
- CNC machine tools and applications
- Comprehensive Machine tool electrical design
- Hands on experience of machine tool electrical design
- Develops confidence on machine design
- Ready for plug & play from first day



TRAINING METHODOLOGY

The course will have regular theory sessions, video/AV presentations, design software demonstrations, drafting practice, conceptual design sessions, design review sessions, final design submissions, visit to machine tool industries, guest lecture, regular assessments and evaluations. Certificates will be issued to participants completing the course successfully.

FACULTY

The faculty of the training programmes will consist of industry experts specialized in machine tool design and theoretical specialists from leading institutions. CAD/ CAM experts from various design software industries will handle demo and practical. An interactive learning process will be adopted to enable participants to build practical skills on a solid theoretical knowledge base.

VENUE

IMTMA Design Institute, BIEC, Bangalore

COURSE TIMINGS

9:00 AM to 17:30 pm, Monday to Saturday

BATCH SIZE

20 Students per batch ; Registrations on first-cum-first-serve basis.





Why IMTMA Design Institute ?

- ADVANCED DIGITAL CLASSROOM
- INDUSTRY EXPERIENCED FACULTY
- CURRICULUM BLENDED WITH LATEST DESIGN TRENDS
- HANDS-ON TRAINING MODULES (80% PRACTICAL INPUTS)
- ADVANCED MECHANICAL LABS
- SIEMENS AND FANUC SIMULATION KITS
- HYDRAULIC AND PNEUMATIC TEACHING MODULES
- INTERSPERSED INDUSTRIAL VISITS AND GUEST LECTURES
- PROJECT WORK AND REGULAR ASSESSMENTS
- IMTMA CERTIFICATION

About IMTMA : Indian Machine Tool Manufacturers' Association (IMTMA) is the single point of contact for the machine tool industry in India. The Association has over the years transformed itself to looking beyond, to focus on issues of productivity, quality, technology, new product development, design, customer satisfaction, etc. for enhancing competitiveness of the industry in both domestic and overseas markets.

IMTMA Technology Centre : IMTMA has established a state-of-art training facility at IMTMA Technology Centre, BIEC, Bangalore. The objective is to increase competitiveness, enhance efficiency and improve productivity of machine tool builders and users across the country by providing technology inputs and industry standard training.

IMTMA TECHNOLOGY CENTRE IS PARTNERED BY



For details contact -

H. V. Rajashkara

Director - Design Institute, IMTMA

tel : 080-66246808 email : rajashkara@imtma.in
cell : 9740192645

To register contact -

Rahul Vylen

Executive - Design Institute, IMTMA

tel : 080-66246835 email : rahul@imtma.in
cell : 9663884656



IMTMA
Design Institute

Indian machine Tool Manufacturers' Association
@ Bangalore International Exhibition Centre (BIEC)
10th Mile, Tumkur Road, Madavara Post, Bangalore - 562 123
Tel : 080 6624 6600 Fax : 080 6624 6658 Website : www.imtma.in