Mastering 5-Axis CNC Programming Advanced Techniques and Strategies
Date : 7 to 9 October, 2025
Venue : IMTMA Technology Centre, Pune

INTRODUCTION

Machining technology is progressing quickly, with advances in hard milling, high speed machining, chip thinning, live tooling on lathes, and many more. 5 axis Machining Centres form the latest in the series providing infinite possibilities as to the part sizes, shapes and complex profiles which cannot be machined in a single set up. Its multidirectional approach to cutting tool ensures increased productivity, highest accuracy, rigidity and improved surface finish. 5 axis machining will enable single set up machining of sophisticated design components having widespread applications in aerospace, die/mold, energy and automotive sectors.

Systematic training in 5 axis machining is a must to realise the benefits of machining multiple faces of the component in single set up.

Keeping this in view, Indian Machine Tool Manufacturers' Association is organising 3 days programme on **"Mastering 5-Axis CNC Programming: Advanced Techniques and Strategies".**

FOCUS AREAS

- Overview of 5-Axis CNC Machining
- Advantages and applications of 5-Axis CNC programming
- Understanding machine kinematics and tool paths
- Advanced toolpath generation techniques for 5-Axis machining
- Optimizing toolpath efficiency and quality
- Collision avoidance strategies
- Machining complex geometries using 5-Axis CNC programming
- Strategies for machining curved surfaces, freeform shapes
- Efficient programming for multi-surface machining
- Strategies for simultaneous 5-axis machining
- 3+2 machining techniques and applications
- Advanced indexing and rotational machining techniques
- Selection of appropriate cutting tools for 5-Axis machining
- Toolpath optimization for reducing tool wear and increasing tool life
- Toolpath smoothing techniques for improved surface finish
- Post-processing considerations for 5-Axis CNC programs
- Verifying and simulating 5-Axis toolpaths
- Detecting and resolving potential issues in simulation
- Exploring advanced features in CAD/CAM software for 5-Axis CNC programming

KEY TAKE AWAYS

At the end of this program, the participants shall be able to:

- Understand machining a component with 5-axis programming.
- Effective manufacturing with single set up.
- Reduced error due to less number of setting.
- Hands-on practice on Mastercam software for 5 - axis machining of sample component

PARTICIPATION FEE

Rs. 13750/-
+18% GST
IMTMA Members/ Micro Companies/ Individuals/ Educational Institutions / Students/ IMTMA Non Members/ Others

USD 550/-
Overseas Participants

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

PARTICIPANT PROFILE

Working professionals from CNC Machine shops willing to remain current and competitive in the business Individuals looking for career growth in CNC multi axis machining

FACULTY

Industry Experts from IMTMA and Mastercam instructors

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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.