Manufacturing Technology Training
An IMTMA initiative

Effective Maintenance Towards Zero Down Time (ZDT) - Electrical Aspects of CNC Machines
Date : 11 to 13 March, 2026
Venue : IMTMA Technology Centre, Bengaluru

INTRODUCTION

CNC machines are real Mechatronic systems, having electrical and electronic circuits interacting with mechanical actuators / sub systems. Diagnostics and root cause analysis is an important aspect of maintenance, which is most often ignored. Often the roots of a mechanical problem is in the electronics area and that of an electronic problem lies elsewhere. Thorough understanding of the CNC machine circuit diagram, Ladder diagram and CNC parameters is needed to find and fix the root cause to minimize MTTR (Mean Time To Repair) and effective planning of PMBF (Preventive Maintenance Before Failure) towards zero down time.

FOCUS AREAS

- Anatomy of CNC machines – Overview of various sub-systems of CNC Turning and Machining Centres
- Systematic approach to diagnostics and problem solving
- Circuit Diagram study – Electrical and electronic circuits
- Circuit Diagram study – Hydraulic, Lubrication and Pneumatic sub systems
- Maintenance aspects in CNC controllers
- Typical problems in Electrical and Electronic sub-systems; Safety aspects; Alarm messages, Alarm History and Operations History
- Maintenance aspects of drives and encoder
- CNC Parameters setting
- CNC memory data backup

KEY TAKE AWAYS

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

- How to carry out preventive and break-down maintenance of CNC machines
- Identifying faults in various components of CNC machines
- How to report faults correctly to the manufacturer
- Sub systems and circuits of CNC machines

PARTICIPATION FEE

Rs. 6999/-
+18% GST
IMTMA Members/ Micro Companies/ Individuals/ Educational Institutions / Students/ IMTMA Non Members/ Others

USD 280/-
Overseas Participants

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

PARTICIPANT PROFILE

This programme will benefit managers, engineers and middle management personnel involved in the functions of production and maintenance of CNC machines from machine tool, automobile and auto ancillaries, tool rooms, aerospace, defence & railway establishments, general engineering and other manufacturing industries.

Note: Participants are expected to have a basic working knowledge of CNC Machines as the constructional aspects of CNC machines will not be discussed in detail in this programme.

FACULTY

This program will be conducted by **Mr. Ramadas R. Nambi.**

Mr. Ramadas R Nambi is an industry expert with over 30 years of experience in the area of CNC control systems, CNC machines, Industrial robots & Unmanned operations. Presentations will be accompanied by practical demonstrations and case studies. The workshop will be highly interactive where participants will be able to discuss specific problems in maintenance and solicit feedback from the expert faculty.

For Registration Contact
Digvijay Nath Pandey
Programme Coordinator
7349067391
digvijay@imtma.in
Back End Operations
9742626488
enquiry@imtmablr.com

Contact Address
INDIAN MACHINE TOOL MANUFACTURERS' ASSOCIATION
@ BIEC, 10th Mile, Tumkur Road, Madavara Post,
Bangalore - 562 123
Tel : 080-66246600
Fax : 080-6624-6658

imtmatrainning.67038796@hdfcbank

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.