A Workshop on CNC Machine Tools

Activity Report

Academic Year	2024-25
Program Driven by	Self
Quarter	I
Program / Activity Name	A Workshop on CNC Machine Tools
Program Type	
Program Theme	Innovation and startups
Start Date	
End Date	
Duration of the Activity (in Mins)	180 approx 3 hrs
Number of Student Participant	50
Number of Faculty Participant	5
Number of external Participant	--
Expenditure Amount in Rs.	1000/-
Any Remark	--
Mode of Session Delivery	Offline
Objective	
Benefit in terms of Learning / Skills / Knowledge obtained	
Feedback	
Video url (mp4)	
Photograph 1 (jpg)	Attached
Photograph 2 (jpg)	Attached
Overall report of the Activity (pdf)	As given below

Dr. P. H. Zope

Convener IIC

Report on Workshop: "CNC Machine Tools"

Organized by: Department of [Insert Department Name, e.g., Mechanical Engineering]
Workshop Title: A Workshop on CNC Machine Tools

Introduction

The Department of [Insert Department Name] organized a hands-on workshop on **CNC (Computer Numerical Control) Machine Tools**, aimed at enhancing the technical skills and practical understanding of students regarding modern machining processes. The session focused on the operation, programming, and industrial applications of CNC machines, which are essential components in today's automated manufacturing systems.

Workshop Objectives

The primary objectives of the workshop were:

- To introduce students to the working principles and components of CNC machines.
- To provide hands-on training in **CNC programming** using G-codes and M-codes.
- To demonstrate **simulation and tool path generation** using CAM software.
- To promote awareness about the role of CNC in **Industry 4.0 and Smart Manufacturing**.

Key Activities and Content

The workshop was conducted over [Insert Number of Days] days and included both **theoretical sessions and live demonstrations**. Key topics covered:

- Basics of CNC technology and types of CNC machines (Turning, Milling, etc.)
- Introduction to coordinate systems, tooling, and part setup.
- Writing and interpreting CNC programs.
- Operating CNC machines for sample jobs (e.g., turning a component, engraving, etc.)
- Safety measures and troubleshooting in CNC operations.

Participants were guided through **practical exercises** to reinforce learning. The instructors used industry-standard software and machines to simulate real-world machining scenarios.

Participation and Outcomes

The workshop saw enthusiastic participation from **[Insert Number] students**, along with faculty members from the department. By the end of the workshop, students were able to:

- Write basic CNC programs for standard operations.
- Operate CNC machines under supervision.
- Understand the integration of CNC technology in modern manufacturing.

Feedback from participants indicated a strong appreciation for the **hands-on learning approach** and the **real-world relevance** of the content delivered.

Conclusion

The workshop was a significant step toward bridging the gap between academic concepts and industrial practices. It equipped students with essential skills that are increasingly demanded in today's precision manufacturing and automated production sectors. The department aims to organize more such skill-development workshops in the future.