

TRAIN THE TRAINER –CNC PROGRAM

Introduction

The Department of Mechanical Engineering organized a specialized "CNC Train the Trainer" program for the 6th-semester students on 24th May 2024. The primary objective of this program was to equip a select group of students with the necessary knowledge and skills to become trainers in CNC technology. These student trainers would then be responsible for imparting CNC knowledge to their peers, fostering a deeper understanding of this crucial manufacturing technology.

The program aimed to equip students with advanced knowledge and practical skills in Computer Numerical Control (CNC) machining and programming, fostering both technical expertise and instructional capabilities. The training was given by in house faculty Prof. Hemanth Suvarna, subject expert.



Objective

The primary objective of the program was to prepare students for leadership roles in CNC operations by:

- Enhancing their understanding of CNC systems and machining processes.
- Developing their ability to train others in CNC programming and operations.
- Bridging the gap between academic knowledge and industry practices.
- The program was structured into two key phases:

Phase 1: Technical Training

- CNC Fundamentals: Introduction to CNC technology, its components, and applications.
- CNC Programming: Hands-on training on CNC programming languages (e.g., G-code, M-code).
- Machine Operation: Practical sessions on operating CNC machines (lathe and milling).
- Tool Path Generation: Using CAD/CAM software to generate tool paths for CNC machining.



Phase 2: Training Methodology and Pedagogy

- Effective Training Techniques: Interactive teaching methods, group discussions, and hands-on exercises.

- **Communication Skills:** Developing clear and concise communication skills to effectively convey technical information.
- **Presentation Skills:** Preparing and delivering engaging presentations on CNC topics.
- **Feedback and Evaluation:** Techniques for assessing learner understanding and providing constructive feedback.

4. Program Highlights

- **Expert Faculty:** The program was conducted by experienced faculty members with extensive knowledge in CNC technology.
- **Hands-on Training:** Practical sessions on CNC machines allowed students to gain hands-on experience.
- **Industry-Relevant Content:** The curriculum was designed to align with industry standards and practices.
- **Peer-to-Peer Learning:** The train-the-trainer approach encouraged collaborative learning and knowledge sharing.

Activities Conducted

- **Hands-on Training:** Students operated CNC machines under expert guidance.
- **Group Activities:** Teams were assigned projects to create and simulate CNC programs.
- **Q&A Sessions:** Resource persons addressed queries and shared industry insights.

Outcomes

- Students gained a deeper understanding of CNC operations and programming.
- Improved their ability to handle CNC equipment independently.
- Enhanced confidence and skills to train others in CNC machining.
- Bridged the gap between theoretical concepts and practical applications.

Feedback and Conclusion

The program received positive feedback from participants, who appreciated the practical approach and expert guidance provided. Many students expressed increased confidence in their technical and instructional skills.



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The department plans to conduct more such programs in the future to further prepare students for industry challenges and leadership roles.

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