

3-Day Workshop on "A Beginner's Guide to CNC & Basic Programming" at AVPTI College DIC-SPOKE, Rajkot

DATE: 22/01/2025 to 24/01/2025

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DIC Coordinator: Dr. P.K. Faruki (Head IT)

DIC Co-Coordinator: B. S. Bhatt (Lecturer in EC Engg.)

Report Summary:

This report summarizes the 3-day workshop on "A Beginner's Guide to CNC & Basic Programming" conducted at AVPTI College, Rajkot. The workshop aimed to introduce participants to the fundamentals of Computer Numerical Control (CNC) technology and its programming.

Workshop Objectives:

- To provide a basic understanding of CNC machines and their components.
- To introduce participants to CNC programming concepts and techniques.
- To equip participants with hands-on experience in operating a CNC machine.
- To foster an interest in CNC technology and its applications.

Workshop Content:

Day 1:

- **Introduction to CNC Technology:**
 - Definition and history of CNC machines
 - Types of CNC machines (e.g., milling machines, lathes)
 - Components of a CNC machine (e.g., controller, motors, spindle)
 - Applications of CNC technology in various industries
- **CNC Programming Basics:**
 - Introduction to G-code and M-code

- Basic programming commands (e.g., movement commands, tool change commands)
- Writing simple CNC programs
- Simulation of CNC programs

Day 2:

- **Hands-on Experience with CNC Machine:**
 - Safety procedures and machine operation
 - Setting up a CNC machine for a simple part
 - Running a CNC program on the machine
 - Monitoring and troubleshooting the machine
- **Advanced CNC Programming:**
 - Subroutines and macros
 - Tool path generation
 - Advanced programming techniques
- **CNC Software and CAM Systems:**
 - Introduction to CNC software and Computer-Aided Manufacturing (CAM) systems
 - Using CAM software to generate CNC programs

Day 3:

- **CNC Maintenance and Troubleshooting:**
 - Common CNC machine problems and their solutions
 - Preventive maintenance procedures
 - Safety considerations
- **Applications of CNC Technology:**
 - Case studies of CNC applications in various industries
 - Future trends in CNC technology
- **Workshop Wrap-up and Q&A:**
 - **Feedback session** and evaluation
 - **Certificate** distribution

Workshop Outcomes:

- Participants gained a basic understanding of CNC machines and their components.
- Participants learned the fundamentals of CNC programming, including G-code and M-code.
- Participants had hands-on experience in operating a CNC machine.
- Participants developed an interest in CNC technology and its applications.

Workshop Evaluation:

- **Participant Feedback:** Positive feedback was received from participants regarding the workshop content, instructor, and overall experience.
- **Instructor Evaluation:** The instructor was evaluated positively for their knowledge, teaching skills, and ability to engage participants.

Recommendations:

- Consider offering a more advanced workshop for participants who wish to deepen their knowledge of CNC technology and programming.
- Explore the possibility of organizing similar workshops in other educational institutions and industries.
- Continue to update the workshop content to reflect the latest advancements in CNC technology.

Conclusion:

The 3-day workshop on "A Beginner's Guide to CNC & Basic Programming" at AVPTI College, DIC SPOKE Rajkot was a successful event that provided participants with valuable knowledge and hands on skills in CNC technology. The workshop achieved its objectives and received positive feedback from participants.

Additional Information:

- **Workshop Dates:** 22/01/2025 to 24/01/2025
- **Number of Participants:**65
- **Instructor Name:** Naushad Garana, Rohit Raval and Dhaval Pankhaniya
- **Workshop Materials:** Given to students (G-code, M-code, tools specification manual)
- **Photographs:**





 **DESIGN INNOVATION CENTRE**

Design Innovation Centre, Rajkot SPOKE
A.V. Parekh Technical Institute Rajkot

Three days' workshop on
Beginner's Guide to CNC &
Basic Programming

DATE: 22/01/2025 to 24/01/2025

Renowned industry Expert's
1. Mr. Naushad Garana
2. Mr. Raval Rohit

Registration fees:

- Students / Research Scholar: 50/-
- Academicians / Industry Experts: 500/-

Free Working lunch for registered students/Members

Registration link:
<https://forms.gle/87edKHAzbgAY3wMn9>

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Shri P.C. CHAVDA
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Lecturer in Mechanical Engg.

Patrons
Dr. Parvez Faruki Head, IT
Dr. P. P. Kotak Principal



Feedback Analysis:

1. Relevance and Clarity of Content

- **Excellent:** Majority of the responses are marked as "Excellent," indicating the content was highly relevant and clear to the participants.

2. Instructor's Knowledge and Ability to Explain

- **Excellent:** Most students rated the instructor's knowledge as "Excellent," demonstrating satisfaction with the instructor's expertise.

3. Usefulness of Hands-On Training

- **Excellent:** Almost all participants found the hands-on sessions highly useful for understanding CNC programming.

4. Quality of Technical Equipment

- **Excellent:** Participants overwhelmingly appreciated the quality and availability of technical tools like CNC machines, computers, and simulation software.

5. Food and Facility Arrangements

- **Excellent:** Responses indicate strong approval for food, the working environment, and other provided facilities.

6. Interest in Future Workshops

- **Yes:** Most participants expressed interest in attending similar workshops in the future, showcasing the workshop's success.

7. Workshop Pace

- **Just Right:** While most participants found the pace "Just Right," a small number mentioned it was "Too Fast" or "Too Slow."

8. Overall Experience

- **Excellent/Very Good:** The majority rated their overall experience as "Excellent," with a few choosing "Very Good."

Participant Demographics

- Students from various institutes, including **GEC Rajkot**, **AVPTI**, **VVP Engineering College** and **Marwadi University**, attended the workshop.
- Departments represented include **Mechanical Engineering** and **Electrical Engineering**.