

REPORT ON "BASIC OF 3D PRINTER" SESSION

Executive Summary

An expert session on **Basic of 3D Printer** was successfully organized at Government Polytechnic, Rajpipla on July 29, 2025. The event aimed to introduce cutting-edge manufacturing technology to newly admitted diploma students. Mr. S.A. Patel, Lecturer in the Mechanical Engineering Department, served as the expert speaker, guiding 49 participants through the core concepts of additive manufacturing.

Event Details

- **Institution:** Government Polytechnic, Rajpipla
 - **Event Name:** Basic of 3D Printer Session
 - **Date:** 29/07/2025
 - **Time:** 01:00 PM to 03:00 PM
 - **Expert Speaker:** Mr. S.A. Patel (Lecturer, Mechanical Engineering Dept.)
 - **Target Audience:** Newly admitted Diploma students
 - **Total Attendance:** 49 students
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Objectives of the Session

- To introduce new diploma students to modern manufacturing technologies.
 - To explain the fundamental operating principles of 3D printing.
 - To bridge the gap between academic theory and current industry trends.
 - To spark interest in innovative project development and design thinking.
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Detailed Event Proceedings

Inauguration and Introduction

The session commenced at 01:00 PM with a welcoming address to the expert speaker, Mr. S.A. Patel, and the attendees. The coordinator highlighted the growing relevance of 3D printing across diverse engineering domains.

Key Technical Aspects Covered

Mr. S.A. Patel delivered a comprehensive presentation tailored for beginners, covering the following key areas:

- **Introduction to Additive Manufacturing:** Explanation of how 3D printing differs from traditional subtractive manufacturing methods.
- **Core Components:** Overview of the essential parts of a 3D printer, including the extruder, hot end, print bed, and axes.
- **The 3D Printing Process:** Step-by-step walkthrough from creating a digital 3D CAD model to slicing the file (generating G-code) and final printing.
- **Materials Used:** Introduction to common printing filaments like PLA and ABS, detailing their properties and use cases.
- **Industrial Applications:** Discussion on how 3D printing is revolutionizing prototyping, healthcare, aerospace, and automotive industries.

Interactive Q&A Session

The final 20 minutes of the session were dedicated to an open forum. Students enthusiastically asked questions regarding the future scope of 3D printing, career opportunities in design, and the affordability of the technology for personal projects. Mr. Patel provided practical insights and encouraged the students to experiment with open-source modeling software.

Key Outcomes

- Students gained foundational knowledge of 3D printing terminology and hardware.
 - Participants learned the digital-to-physical workflow required to create a 3D object.
 - The newly admitted students showed enhanced motivation toward exploring departmental labs and technical projects.
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Conclusion

The session concluded at 03:00 PM with a formal vote of thanks to Mr. S.A. Patel for sharing his valuable expertise. The high level of engagement from the 49 attendees demonstrated the success of the event in achieving its educational goals.