

# WORKSHOP REPORT

**Title: CAD Designing and 3D Printing Workshop**

**Organized By: Centre for Artificial Intelligence**

**In Collaboration With: SVR Robotics**

**Resource Person: Dr. Rajni Ranjan Singh Makwana**

 **Madhav Institute of Technology & Science, Gwalior (M.P.), INDIA**  
Deemed University  
(Declared under Distinct Category by Ministry of Education, Government of India)  
NAAC ACCREDITED WITH A++ GRADE

*Centre for Artificial Intelligence*  
*Presents*  
**“ROBOFORGE”**  
*(1-day 3D Modelling and Printing workshop for robotics prototyping)*

**PRIZES TO BEST 3 PROTOTYPES**

**CAD DESIGNING FOR ROBOTICS**     **ROBOTICS PROTOTYPING**

**WHAT YOU'LL LEARN**

**HANDS ON “3D PRINTING”**

**E-CERTIFICATES FOR ALL**

**DATE: 7TH SEPTEMBER 2025**  
**TIME: 10:00 AM – 5:00 PM**  
**VENUE: M204, AIR LAB**

**(THE WORKSHOP IS BEING CONDUCTED ONLY FOR AIR 1<sup>ST</sup> YEAR STUDENTS)**

**For any queries, contact :**  
**DR Rahul Kumar (9086179757)**  
**ER Harshdeep Sharma (8224937833)**

## **Target Audience: First Year Students (AI & Robotics Branch)**

### **Introduction**

A hands-on workshop on CAD Designing and 3D Printing was successfully conducted for first-year students of the AI & Robotics branch. The main objective of this workshop was to introduce students to the fundamentals of design and manufacturing using modern tools and technologies.

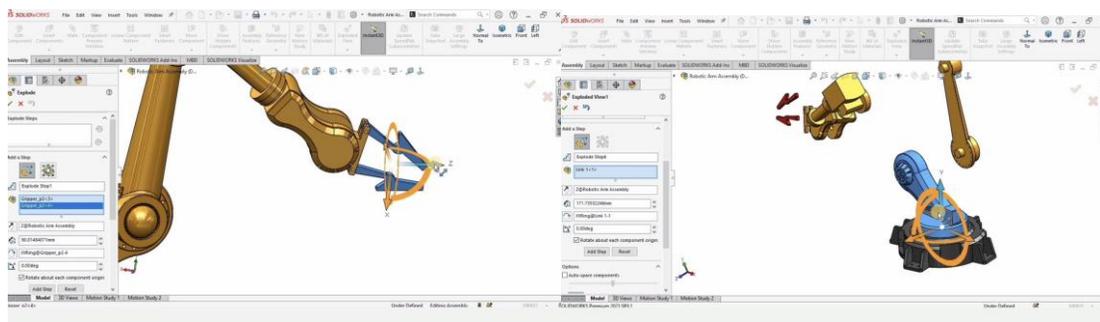
### **Workshop Objectives**

- To provide basic knowledge of CAD (Computer-Aided Design)
- To introduce students to SolidWorks software
- To demonstrate the complete 3D printing workflow
- To enhance practical understanding through hands-on activities

### **Workshop Description**

#### **1. CAD Designing Session**

Students were introduced to CAD designing concepts and learned how to use SolidWorks software to create 3D models. As part of the hands-on activity, they designed a robotic arm, which helped them understand sketching, extrusion, and assembly basics.



#### **2. Slicing Process**

Students were taught the slicing process, where the 3D model is converted into machine-readable instructions (G-code). They learned about parameters such as layer height, infill, and supports.

### 3. 3D Printing

The working of a 3D printer was explained along with materials used and the complete workflow from design to final product.



### 4. Quiz and Evaluation

A short quiz was conducted at the end of the workshop to evaluate the understanding of the participants.

### Rewards and Recognition

Gifts were awarded to the top 4 performers in the quiz to encourage participation and engagement.



### Role of Resource Person

The workshop was guided by Dr. Rajni Ranjan Singh Makwana, who provided valuable insights and expert knowledge throughout the session.

## Conclusion

The workshop was highly successful and well-received by the students. It provided foundational knowledge in CAD designing and 3D printing along with practical exposure.

## Outcome

- Students gained hands-on experience in SolidWorks
- Improved understanding of 3D printing workflow
- Increased interest in robotics and design
- Encouraged practical learning and creativity



Dated : 7th September'2025