



PRAGATI ENGINEERING COLLEGE

(AUTONOMOUS)

DEPARTMENT OF MECHANICAL ENGINEERING

Academic year: 2025-26

Date: 23-02-2026

CIRCULAR

Additive Manufacturing Club of Mechanical Engineering Department in association with Career Guidance Cell is organizing a Seminar to the Mechanical Engineering students on 24th February 2026. The Theme of the Seminar is “*Discussion on 3d printing design using CATIA tools*”.

Event : Seminar.
Date of the Event : 24th February 2026.
Venue : CAD Lab.

INCHARGE

Copy to:

1. **HOD-ME.**
2. **Departmental file.**
3. **AM Club In-charge – ME.**
4. **Career Guidance Cell In-charge – ME.**





PRAGATI ENGINEERING COLLEGE

**(AUTONOMOUS)
INDUSTRY 4.0 CLUBS**

Learning is Supreme Deity

ADDITIVE MANUFACTURING CLUB

ORGANISED BY DEPARTMENT OF MECHANICAL ENGINEERING IN ASSOCIATION
WITH
CAREER GUIDANCE CELL

DISSCUSSION ON 3D PRINTING DESIGN USING CATIA TOOLS

SPEAKER :

**Mrs.K.Tulasi
Assistant Professor**

FACULTY COORDINATOR

**Mr. P. Ram Prasad
Assistant Professor
Mechanical Engineering Department**

**VENUE: CAD LAB
DATE: 24th Feb 2026
TIME: 11:00 AM Onwards**

**STUDENT COORDINATOR
Mr. P.Eswar Prasanth (23A31A0341)
Mechanical Engineering Department**





PRAGATI ENGINEERING COLLEGE

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DEPARTMENT OF MECHANICAL ENGINEERING

A.Y 2025-26

Dt. 25.02.2026

A SEMINAR

ON

“DISCUSSION ON 3D PRINTING DESIGN USING CATIA TOOLS”

The Additive Manufacturing Club of the Mechanical Engineering Department, in collaboration with the Career Guidance Cell, successfully organized a seminar titled Discussion on 3d printing design using CATIA tools. The event, held in room CAD Lab, saw enthusiastic attendance from 44 second-year Mechanical Engineering students. The seminar was open to all interested individuals, fostering an inclusive environment that encouraged curiosity and learning about the future of manufacturing.

Mrs. K.Tulasi delivered the session, captivating the audience with his engaging presentation. Her insightful discussion made complex Additive Manufacturing (AM) design concepts easy to understand, providing a valuable learning experience for all participants.

Technical Design Specifications (The "How")

This is where you detail the CATIA tools used. Break it down by the "Digital Thread":

- **Geometry Creation:** Note if you used Solid, Surface (GSD), or Lattice workbenches.
- **Optimization Parameters:** If you used **Topology Optimization**, list the constraints:
 - **Material:** (e.g., AlSi10Mg or Carbon Fiber PLA).
 - **Loads:** The forces applied (in Newtons) to the part during simulation.
 - **Target:** (e.g., "Reduce mass by 40% while maintaining a Factor of Safety of 2.0").

Print Preparation Data

In AM, the design isn't finished until the "Build File" is ready. Include these technical details:

Parameter	Specification
Orientation	45° (to minimize support structures)
Layer Height	0.1 mm – 0.2 mm
Tessellation (Sag)	0.01 mm (for high-fidelity curves)

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Parameter	Specification
File Format	.3MF (Recommended) or .STL

Manufacturing Constraints & Solutions

Every report should address the "Failure Points." Use this section to show the club how you solved common 3D printing issues in CATIA:

- **Overhang Management:** How you adjusted geometry to avoid supports.
- **Wall Thickness:** Validation that no wall is thinner than the printer's nozzle diameter (e.g., 0.4 mm).
- **Drainage:** For resin or powder prints, specify where the "escape holes" were placed.

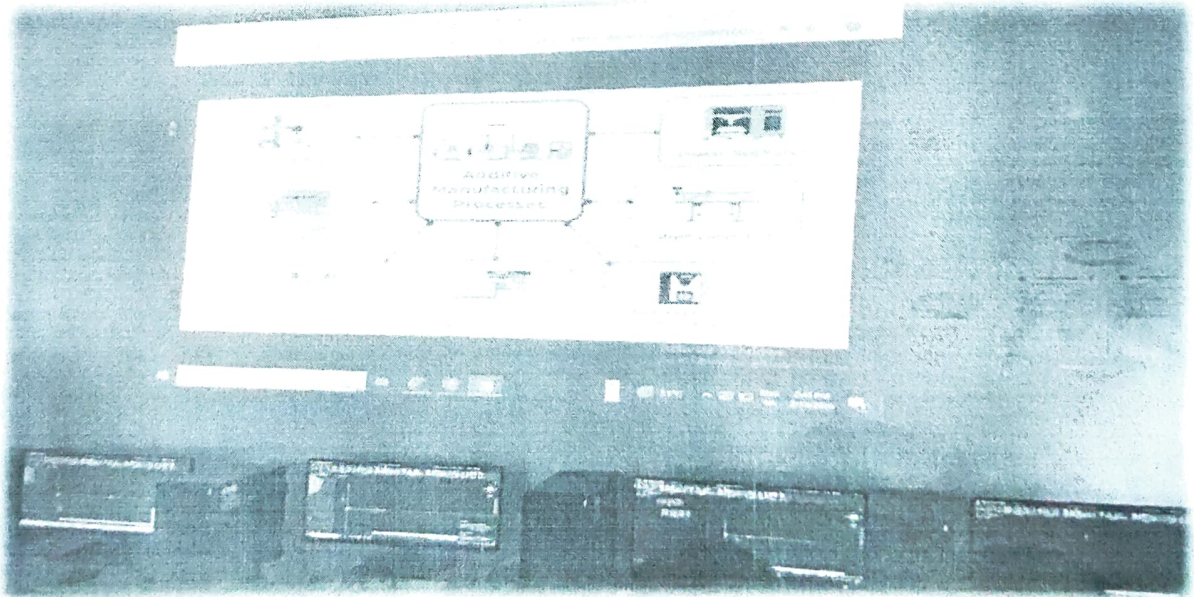
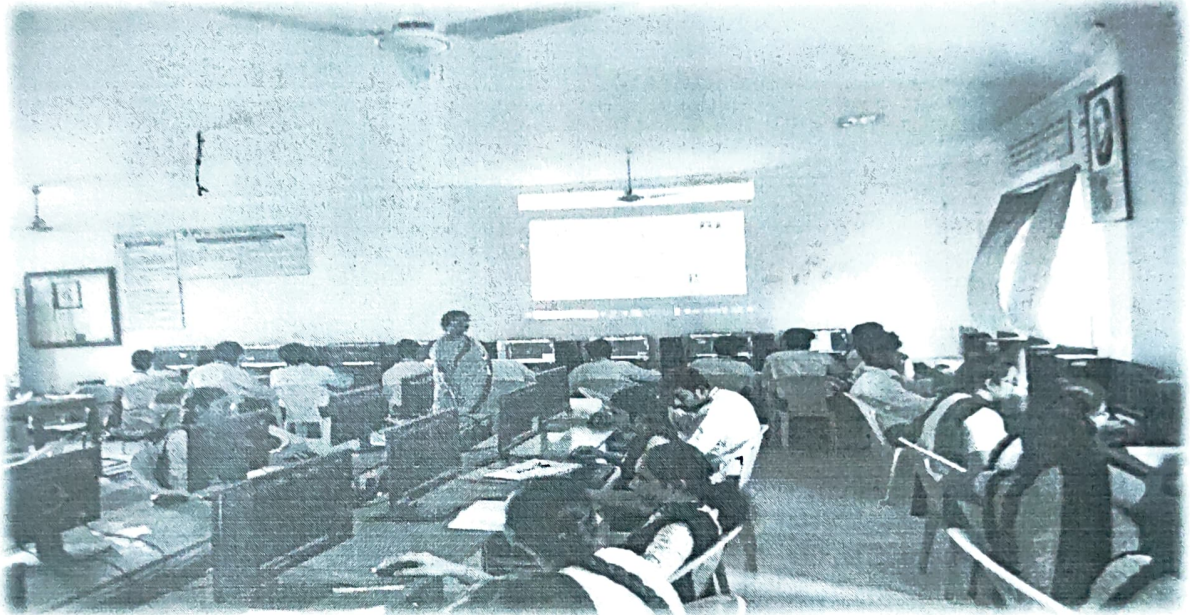
Cost and Time Analysis

Additive manufacturing is often more expensive than traditional methods for simple parts. Justify the use of 3D printing:

- **Part Consolidation:** "Reduced assembly from 5 parts to 1."
- **Weight Savings:** "Saved 200g of material, resulting in 15% longer battery life."
- **Lead Time:** "Produced in 12 hours vs. 2 weeks for CNC machining."

Visual Comparison: Always include a "Before vs. After" visual. Show the original "blocky" CAD part next to the CATIA Generative Design organic part. This is the most persuasive evidence for using advanced tools.

PICTURES OF THE EVENT:



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Participants List

Name of the Event: Discussion on 3d printing design using CATIA tool

Venue : CAD LAB

Date : 24/2/26

S.No	Roll No	Name	Signature
1)	24A31A0301	CH. Deepika	CH. Deepika
2)	24A31A0302	G. Trija Sri	G. Trija Sri
3)	24A31A0307	K. Rama Hasini	K. Rama Hasini
4)	24A31A0303	S. Santhoshi	S. Santhoshi
5)	24A31A0306	K. Krishna Kumari	K. Krishna Kumari
6)	25A31A0301	K. Ramya Sri	K. Ramya Sri
7)	24A31A0317	CH. Naveen Teja	CH. Naveen Teja
8)	24A31A0338	M. Santosh	M. Santosh
9)	24A31A0343	M. Siddardha Teja	M. Siddardha Teja
10)	25A35A0306	H. Venkat Sai	H. Venkat Sai
11)	25A35A0308	V. Kasthika	V. Kasthika
12)	25A35A0305	L. VITHAN	L. VITHAN
13)	24A31A0342	M. Chaitanya Prakash	M. Chaitanya
14)	24A31A0309	P. Yuva Teja	P. Yuva Teja
15)	24A31A0318	D. Tony Isaac	D. Tony Isaac
16)	24A31A0344	M. Indraneel Kumar	M. Indraneel Kumar
17)	24A31A0315	CH. Manoj	CH. Manoj
18)	24A31A0353	P. Arash	P. Arash



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19	24A31A0346	N. Sri Harsha	N. Harsha
20	24A31A0351	P.N.S. Suresh Kumar	S. Suresh
21	24A31A0335	K. Jaagde.	K. Jaagde.
25	24A31A0315	B.V. Bhadrarao	B.V. Bhadrarao
28	24A31A0320	D. Panchojanya	Panchojanya
24	24A31A0336	K.N.V. Kumar	K. Kumar
25	24A31A0323	G. Priyaramudu	G. Priyaramudu
26	24A31A0334	K. Santhosh Kumar	K. Santhosh
27	24A31A0348	Mothesh N	Mothesh N
28	24A31A0347	N. John Vidya Sagar	N. John Vidya Sagar
29	24A31A0345	N. Karthik	Karthik N.
30	24A31A0331	K. Nikhil	K. Nikhil
31	24A31A0316	CH. RAKESH	Ch. Rakesh
32	25A35A0303	G. ViswaTeja	G. ViswaTeja
33	25A35A0300	M. Rishi Ravi	M. Rishi Ravi
34	24A31A0321	G. Venkata Ramana	G. Ramana
35	24A31A0324	G.V. Karthik	G.V. Karthik
36	24A31A0350	P. Mahesh Sridhar	P.M. Sridhar
37	25A35A0307	P. Akshay	P. Akshay
38	24A31A0337	K. Sudheer	K. Sudheer
39	24A31A0313	B. Sujatha	B. Sujatha
40	24A31A0330	K. Hari Chandan Savi Suddasan	K. Hari

