MITS
MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
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A Report on

One week Workshop on

CATIA for Design, Modeling, and Drafting

Organized by

Department of Mechanical Engineering

In association with

ISTE Student Chapter

From 15.12.2025 to 20.12.2025

Report Submitted by: Mr. Manoj Kumar S, Assistant Professor, Department of Mechanical Engineering.
Resource Person Details: Mr. GM Raja Mahendra, Mayinkrish Pvt. Ltd, Bangalore
Total Participants: 50 students from the Department of ME
Venue: Siemens Computer Lab
Mode of Conduct: Offline

The Department of Mechanical Engineering, Madanapalle Institute of Technology and Science, Andhra Pradesh**,** Madanapalle, in association with the IEI Student Chapter, MITS, Madanapalle, organized a one-week Training program on "**CATIA for Design, Modeling, and Drafting"** from Dec 15, 2025, to Dec 20, 2025. A total of 50 students participated in this program, making the event a success.

A summary of the skill development program is as follows:

Dr. Dipankar Roy, Dean School of Engineering **& Dr. S. Baskaran**, Associate Professor and head of the Department of Mechanical Engineering, participated in the inaugural function. **Mr. S. Manoj Kumar**, Asst.Prof./ME delivered the Welcome Address, followed by **Dr. S. Baskaran**, who welcomed the resource person and emphasized the importance of the training program. **Mr. Manoj Kumar**, Asst.Prof./ME, introduced the resource person and handed over the session to them.

Objectives of the program:

- To provide fundamental and advanced knowledge of CATIA software for engineering design applications.
- To develop practical skills in 2D sketching, 3D modeling, assembly design, and drafting.
- To familiarize participants with industry-oriented design methodologies and best practices.
- To enhance students' ability to create accurate and professional engineering drawings.
- To bridge the gap between theoretical concepts and real-time industrial design requirements.
- To improve employability skills by training participants in widely used CAD tool

Day-Wise Schedule and Topics Covered:

Day 1 (15-12-2025): The session began with an overview of CATIA software and its applications in engineering design. Participants were introduced to the CATIA user interface and navigation tools. The Sketcher Workbench was explained in detail. Basic sketching tools such as lines, circles, constraints, and profiles were practiced.

Day 2 (16-12-2025): The Part Design Workbench was introduced with emphasis on solid modeling concepts. Participants learned to create 3D models using features like Pad, Pocket, Shaft, and Groove. Feature modification and design intent were explained. Hands-on exercises were conducted to reinforce modeling techniques.

Day 3 (17-12-2025): Advanced part modeling techniques were discussed. Participants learned complex feature creation and modification methods. Feature-based and parametric design concepts were demonstrated. Practical sessions focused on improving modeling efficiency and accuracy.

Day 4 (18-12-2025): The Assembly Design Workbench was introduced. Participants learned assembly creation and component insertion methods. Various assembly constraints and their applications were explained. Exploded views and assembly visualization techniques were demonstrated.

Day 5 (19-12-2025): The Drafting Workbench was introduced for engineering drawing creation. Orthographic views and projection methods were explained. Dimensioning, tolerancing, and annotation techniques were demonstrated. Participants practiced preparing standard engineering drawings.

During the Training Session

Day 6 (20-12-2025): Case studies related to industrial design applications were discussed. Participants worked on practice exercises integrating design, assembly, and drafting. Common errors and troubleshooting techniques were addressed. The workshop concluded with a review session and participant interaction.

Outcomes of the Program:

- Participants gained a strong understanding of CATIA interface and its application in engineering design. Students were able to create 2D sketches and convert them into accurate 3D models using CATIA.
- Participants developed skills in part modeling, assembly creation, and constraint application.
- Students learned to prepare professional engineering drawings with proper dimensioning and annotations.
- The program enhanced hands-on experience and improved problem-solving abilities in design tasks. Participants gained confidence to use CATIA for academic projects and industry-oriented applications

Conclusion:

The one-week training program on "**CATIA for Design, Modeling, and Drafting"** was highly beneficial for the participants. It provided an in-depth understanding of CAD-CAE integration and its applications in mechanical design and analysis. The initiative by the **Department of Mechanical Engineering** and the **ISTE Student Chapter** was appreciated by students and faculty alike

I, Mr. Manoj Kumar S, take this opportunity to express my deep sense of gratitude to all those who have supported and contributed to the successful organization of this program. First and foremost, I extend my sincere thanks to the Management of our institution for their unwavering encouragement and continuous support in promoting academic and professional development initiatives. I am especially grateful **to Dr. P. Ramanathan**, Principal, for his kind permission, motivation, and financial support, which were instrumental in planning and executing this program effectively.