



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE (Deemed to be University)



Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2024 - Band: 201-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH, CST), MBA & MCA

A Report on “Core Training on CAD Design Software” Organized by Department of Mechanical Engineering in association with Aylin Technologies Pvt. Ltd. from 18-05-2026 to 04-07-2026

MITS
MADANAPALLE

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
DEEMED TO BE UNIVERSITY
(Declared under section 3 of UGC Act, 1956 by Govt. of India - HSE)
Madanapalle-517325, Annamayya District, Andhra Pradesh, India. Estd: 1998

School of Engineering
Department of Mechanical Engineering
Organizes
Core Training on CAD Design Software
Training Partner: Aylin Technologies Pvt. Ltd.

Lab 5,
Circular block

25-05-2026 to 04-07-2026 9.30 AM to 5.00 PM

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Aat. Prof., Mech

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Report Submitted by: Dr. Praveen Kumar B, Sr. Assistant Professor, Department of Mechanical Engineering.

Faculty Coordinators:

Dr. Praveen Kumar B, Coordinator, Sr. Assistant Professor, Department of Mechanical Engineering.

1. Mr. P. MD. Rizwan Ali, Co-coordinator, Assistant Professor, Department of Mechanical Engineering.
2. Dr. I. Arun, Co-coordinator, Professor, Department of Mechanical Engineering
3. Dr. R. Prithivirajan, Co-coordinator, Associate Professor, Department of Mechanical Engineering
4. Dr. Anantha Raman L, Co-coordinator, Assistant Professor, Department of Mechanical Engineering
5. Dr. Arun Kumar.D, Co-coordinator, Assistant Professor, Department of Mechanical Engineering
6. Dr. Ved Prakash, Co-coordinator, Assistant Professor, Department of Mechanical Engineering
7. Dr. Muthu Lakshmanan, Co-coordinator, Assistant Professor, Department of Mechanical Engineering
8. Dr. A. Pruthvi Deep, Co-coordinator, Assistant Professor, Department of Mechanical Engineering
9. Mr. G. Kumar, Co-coordinator, Assistant Professor, Department of Mechanical Engineering
10. Mr. S. Manoj Kumar, Co-coordinator, Assistant Professor, Department of Mechanical Engineering

Resource person Details: Mr. Kumar Mayank Priyadarshi and Mr. Vikas, Multi Skills Trainer Aylin Technologies Pvt. Ltd., Delhi, India.

Venue: Siemens lab LB019 and Lab 5, Circular block

Timings: 9:30 am to 5:00 pm

Mode of Conduct: Offline

Report Received on 28-07-2026

Mode of Training: Offline

Participants: IV B.Tech Mechanical Engineering Students

Training Schedule

Module	Duration
Geometric Dimensioning & Tolerancing (GD&T)	18-05-2026 to 23-05-2026
Product Design & Drafting using PTC Creo	25-05-2026 to 06-06-2026
Product Design & Drafting using Siemens NX	08-06-2026 to 20-06-2026
Product Design & Drafting using SolidWorks	22-06-2026 to 04-07-2026

Core Training Overview

The seven-week Core Training Programme commenced with an Orientation Programme conducted on 18-05-2026. The session was organized to familiarize students with the objectives, structure, schedule, and expected outcomes of the training programme.

The programme began with a welcome address by Dr. S. Baskaran, Head of the Department of Mechanical Engineering, who emphasized the importance of developing industry-oriented design skills and encouraged students to actively participate in the hands-on training sessions to enhance their technical competency and career opportunities.

Mr. Kumar Mayank Priyadarshi, Multi Skills Trainer, Aylin Technologies Pvt. Ltd., Delhi, delivered an introductory session on the Core Training Programme. He explained the significance of Geometric Dimensioning & Tolerancing (GD&T), PTC Creo, Siemens NX, and SolidWorks in modern product design and manufacturing industries. He also briefed the students on the training schedule, practical assignments, assessment process, and the industrial applications of the software tools to be covered during the programme.

The orientation session provided students with a clear understanding of the training methodology and motivated them to actively engage in the practical sessions throughout the seven-week programme.



Objectives of the Core Training

- To develop students' proficiency in industry-standard CAD software.
- To strengthen engineering drawing interpretation and GD&T concepts.
- To enhance 3D part modeling, assembly, and drafting skills.
- To improve students' industry readiness for design and manufacturing careers.
- To provide practical exposure through hands-on industrial CAD exercises.

Module I: Geometric Dimensioning & Tolerancing (GD&T)

Duration: 18-05-2026 to 23-05-2026 (One Week)

Overview

The first week of the Core Training focused on Geometric Dimensioning & Tolerancing (GD&T), enabling students to understand internationally accepted engineering drawing standards. The sessions emphasized the interpretation and application of geometric tolerances to ensure functional requirements, manufacturing accuracy, and quality control in mechanical components.

Topics Covered

- Fundamentals of GD&T
- Datum Features and Datum Reference Frames
- Feature Control Frames
- Form, Orientation, Location, and Runout Tolerances
- Reading and Interpretation of Industrial Drawings
- Practical Applications of GD&T Standards

Learning Outcomes

- Understood the principles and symbols of GD&T.
- Interpreted engineering drawings using ASME standards.
- Applied geometric tolerances to mechanical components.
- Improved technical communication through standardized drawings.

Module II: Product Design & Drafting using PTC Creo

Duration: 25-05-2026 to 06-06-2026 (Two Weeks)

Overview

Students received intensive hands-on training in PTC Creo for product design and drafting. The programme covered the complete design workflow from sketch creation to 3D modelling, assembly, and manufacturing drawings through practical industrial exercises.

Topics Covered

- Sketcher Environment
- Feature-Based Part Modelling
- Assembly Modelling
- Engineering Drawing Creation
- Parametric Modelling
- Industrial CAD Exercises

Learning Outcomes

- Developed parametric 3D models using Creo.
- Created assemblies with appropriate constraints.
- Generated manufacturing drawings with standard dimensions.
- Improved product modelling skills through industrial exercises.



Module III: Product Design & Drafting using Siemens NX

Duration: 08-06-2026 to 20-06-2026 (Two Weeks)

Overview

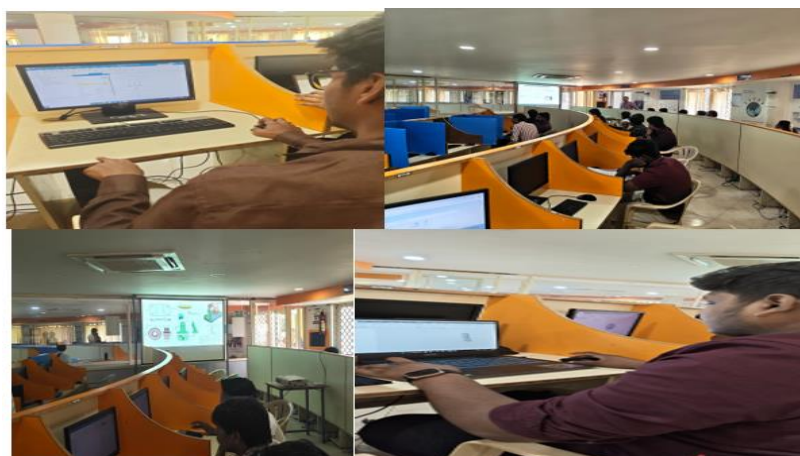
The Siemens NX module introduced students to advanced CAD tools used in modern product development industries. Students gained practical experience in creating industrial components, assemblies, and production drawings using industry-standard workflows.

Topics Covered

- Sketch Creation
- Solid Part Modelling
- Assembly Modelling
- Drafting
- Feature Editing
- Industrial Product Modelling

Learning Outcomes

- Designed complex mechanical components using Siemens NX.
- Prepared detailed production drawings.
- Developed assembly modelling skills.
- Enhanced proficiency in industrial CAD applications.



Module IV: Product Design & Drafting using SolidWorks

Duration: 22-06-2026 to 04-07-2026 (Two Weeks)

Overview

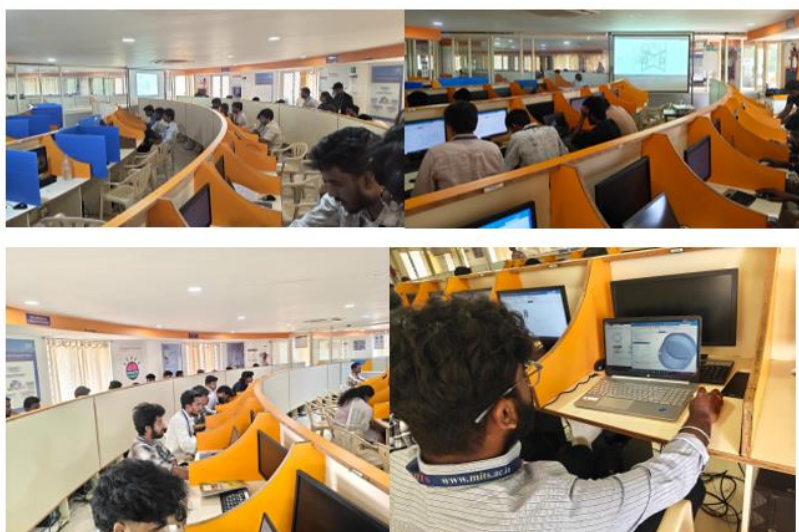
The final module focused on SolidWorks, providing students with practical exposure to modern product design techniques. Students completed several industrial modelling exercises to strengthen their CAD competency and improve their employability in design and manufacturing industries.

Topics Covered

- Sketching
- Part Modelling
- Assembly Design
- Engineering Drafting
- Design Modifications
- Industrial Product Development Exercises

Learning Outcomes

- Created complete product models using SolidWorks.
- Developed assemblies and production drawings.
- Applied design concepts to industrial components.
- Improved confidence in using multiple CAD platforms.



Overall Outcomes of the Core Training

- Students acquired practical knowledge of industry-standard CAD software.
- Enhanced skills in engineering drawing interpretation and GD&T.
- Developed competency in 3D modelling, assembly design, and drafting.
- Strengthened problem-solving and product development skills.
- Improved employability by gaining exposure to software widely used in manufacturing and product design industries.

Program Outcomes (POs) Covered

1. **PO1 – Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **PO3 – Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
3. **PO5 – Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations
4. **PO10 – Communication:** Communicate effectively on complex engineering activities with peers, professionals, and society through presentations, discussions, and startup pitches.
6. **PO12 – Life-long Learning:** Recognise the need for and engage in independent and lifelong learning in the context of technological change and entrepreneurship

SDG Goals Aligned with the Event

1. **SDG 4 – Quality Education:** The event promoted experiential learning by exposing students to real-world entrepreneurial practices and encouraging innovation-based education.
2. **SDG 8 – Decent Work and Economic Growth:** The session inspired students to pursue entrepreneurship, contributing to job creation, economic development, and sustainable business practices.
3. **SDG 9 – Industry, Innovation, and Infrastructure:** By showcasing startup initiatives like *EZZO Mart* and *Mono App*, the talk emphasised innovation, technology integration, and infrastructure-related entrepreneurship in the civil engineering sector.

Students' Feedback

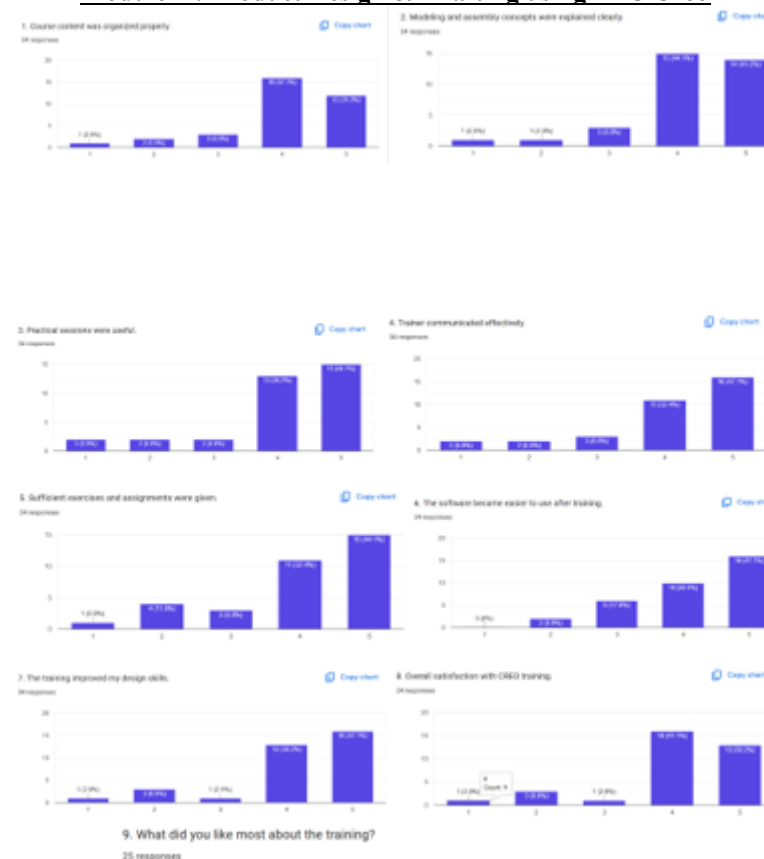
Students expressed that the Core Training significantly improved their practical understanding of CAD software and engineering drawing standards. The hands-on sessions and industrial design exercises enhanced their confidence in product design, modelling, assembly, and drafting. Participants appreciated the industry-oriented approach of the training and recommended conducting similar skill development programmes regularly.

Feedback Analysis:

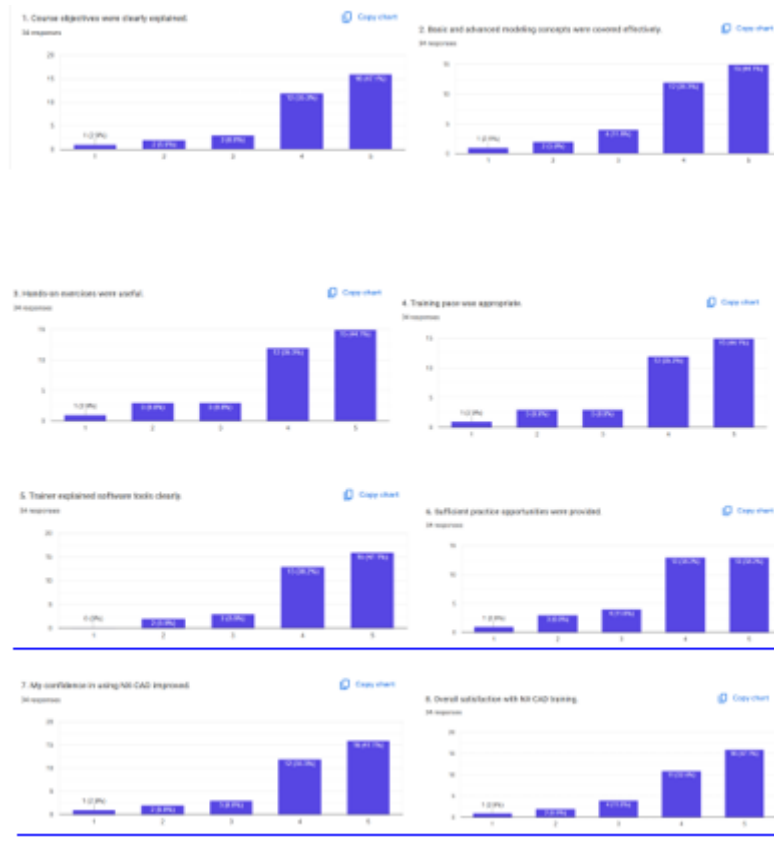
Geometric Dimensioning & Tolerancing (GD&T)



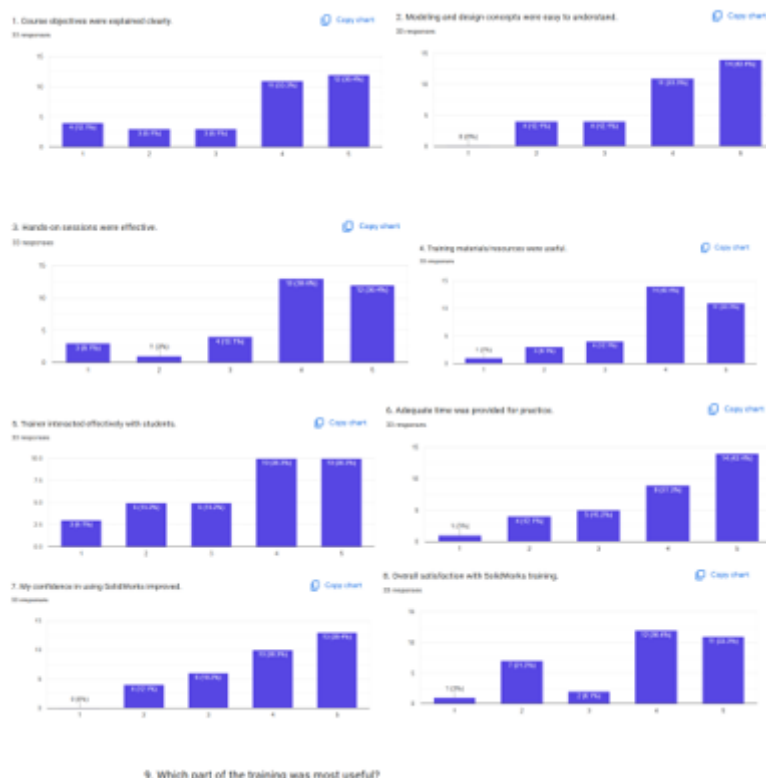
Module II: Product Design & Drafting using PTC Creo



Module III: Product Design & Drafting using Siemens NX



Module IV: Product Design & Drafting using SolidWorks



Conclusion:

The seven-week Core Training Programme successfully enhanced the technical competencies of Mechanical Engineering students in Geometric Dimensioning & Tolerancing, PTC Creo, Siemens NX, and SolidWorks. The programme effectively bridged the gap between academic learning and industrial practice by providing extensive hands-on experience with modern CAD tools. The knowledge and practical skills acquired during the training will support students in higher studies, internships, and careers in product design, manufacturing, and engineering services.