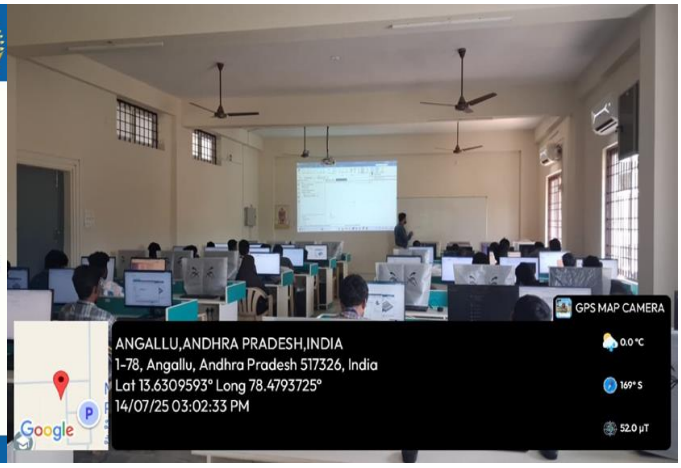
# A Report on Five-day skill development program on "NX CAD"
## Organized by Skill Development Cell
## In association with Department of Mechanical Engineering
## from 14.07.2025 to 19.07.2025


**Report Submitted by: Dr. V.B. Thurai Raaj, Assistant Professor in EEE, Coordinator-Skill Development Cell & SPOC, APSSDC t-SDI.**
**Event Coordinators: Dr. G. Veeresalingam, Assistant Professor, Department of Mechanical Engineering, Mr. Manoj Kumar, Assistant Professor, Department of Mechanical Engineering.**
**Resource Person Details: Mr. Kumar Mayank Priyadarshi, Aylin Technologies Private Limited, Delhi**
**Venue: AI ML Computer Lab, NPN: 005**
**Total Participants: 52 students from the Department of ME**
**Mode of Conduct: Offline**
**Report Received on 14.08.2025.**

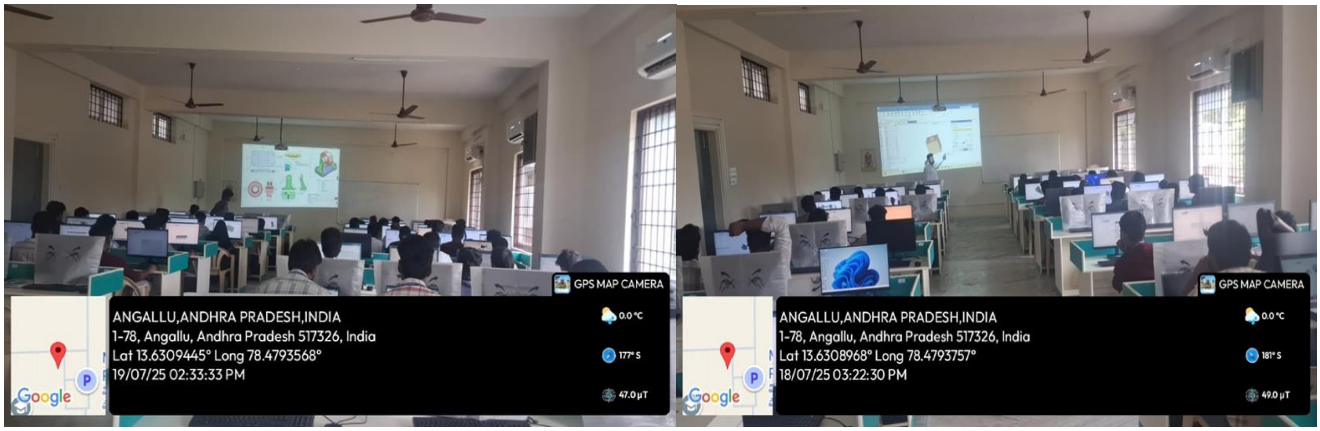
The Skill Development Cell, Madanapalle Institute of Technology and Science, Andhra Pradesh**,** Madanapalle, in association with the Department of Mechanical Engineering, MITS, Madanapalle, organized a five-day skill development program on "**NX CAD**" from July 14, 2025, to July 19, 2025. A total of 52 students participated in this program, making the event a success.

**A summary of the skill development program is as follows:**

Dr. S. Baskaran, Associate Professor and Head of the Department of Mechanical Engineering, participated in the inaugural function. Dr. G. Veeresalingam, 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.

| Day | Session | Topic Discussed |
|---|---|---|
| Day- 1 | Morning | Introduction to NX CAD Interface, Sketching Tools, and Best Modeling Practices. |
| | Afternoon | Parametric 3D Modeling: Solid Modeling Techniques and Feature-Based Design. |
| Day- 2 | Morning | Advanced Part Modeling: Synchronous Modeling and Feature Manipulation. |
| | Afternoon | Assembly Modeling: Constraints, Subassemblies, and Assembly Navigation. |
| Day- 3 | Morning | Drafting and Detailing: Creating 2D Drawings from 3D Models. |
| | Afternoon | GD&T, BOM Creation, and Drawing Annotations in NX Drafting. |
| Day- 4 | Morning | Surface Modeling Techniques: Freeform and Class-A Surfaces. |
| | Afternoon | Sheet Metal Design: Bends, Flanges, Forming Tools, and Flat Patterns. |
| Day- 5 | Morning | Customization, Templates, and Design Reuse Tools (Reuse Library, UDFs). |
| | Afternoon | NX Open, Journaling, and Basic Automation using NX Scripting. |

**During the Training Session**




**During the Training Session**

**The participants achieved the following results:**

- Understand the NX CAD interface and sketching environment. Learn to create fully constrained 2D sketches for parametric modeling.
- Develop 3D parametric models using advanced part modeling tools (extrude, revolve, sweep, hole, shell, etc.) with design intent.
- Build and manage complex assemblies by applying constraints, creating subassemblies, and using component positioning strategies.
- Generate production-ready 2D drawings from 3D models, including orthographic views, sections, annotations, dimensions, and GD&T symbols.
- Explore surface modeling techniques and apply them to create smooth, high-quality aesthetic and functional surfaces.
- Design sheet metal parts using standard features like flanges, bends, cutouts, and flattening tools with manufacturing validation.
- Customize the design environment using templates, UDFs (User Defined Features), and part families to improve design efficiency.
- Automate repetitive design tasks using NX Journaling and introductory NX Open scripting.

I, Dr. V B Thurai Raaj, Event Organizer and Coordinator of the Skill Development Cell, sincerely thank the Management and Dr. C. Yuvaraj, Principal, for granting permission and providing funding to host this program. I appreciate Dr. C. Kamal Basha, Professor and Vice Principal of Administration, for quickly offering the necessary support. I am grateful to Dr. S. Baskaran, Associate Professor and HOD/ME, for his ongoing guidance in all aspects. I also thank Dr. G. Veeresalingam and Mr. S. Manoj Kumar, Assistant Professors in the Department of Mechanical Engineering, for their continuous support as event coordinators throughout this training program. I want to extend my gratitude to the entire SDC team as well.