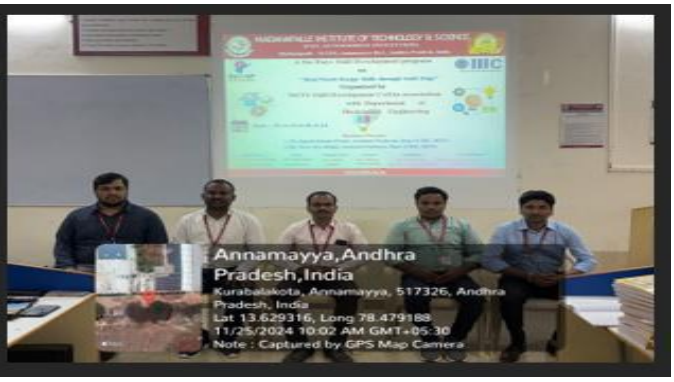
A Report on Six-Days Skill Development Programme on "Real World Design Skills using Solid Edge" Organized by Department of Mechanical Engineering in association with Skill Development Cell (SDC) from 25.11.2024 to 30.11.2024



Report Submitted by: Mr. P. MD. Rizwan Ali, Assistant Professor, Department of Mechanical Engineering & Dr. D. Arunkumar, Assistant Professor, Department of Mechanical Engineering.

Resource Person Details: Dr. Jagesh Kumar Prusty, Assistant Professor, Department of Mechanical Engineering & Mr. Nara Siva Balaji, Assistant Professor, Department of Mechanical Engineering, MITS.

Participants: II Year Mechanical Engineering Students

Mode of Conduct: Offline

Report Received on 04.12.2024

Day 1: Inauguration and Workshop Sessions (25th November 2024)

The workshop commenced with an inaugural ceremony held in the Siemens Computer Lab (East Block 019) at 10:15 AM. Head of the Department, resource persons, faculty members, and students, graced the occasion. Mr. P Mohammed Rizwan Ali began with a welcoming address, provided a warm welcome to all participants and the speakers.

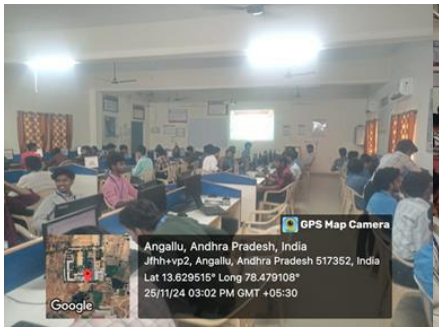
Dr. S. Baskaran, Head of the Department of Mechanical engineering, delivered the presidential address, setting a positive tone for the workshop. Dr. D. Arun Kumar concluded the ceremony with an insightful speech that outlined the workshop's objectives and the importance of Solid Edge in the Real-World Applications.

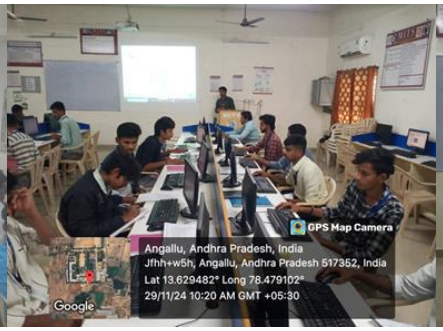
Day 1 (25-11-2024):

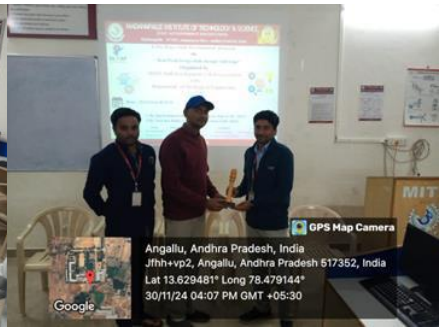
The Day 1 session started by 10:45 AM and kicked off with a detailed presentation by Dr. Jagesh Kumar Prusty and he introduced participants to Solid Edge, focusing on its interface, navigation, and foundational tools. The session covered the workspace layout, key features like the Ribbon Bar and Pathfinder, and customization options for productivity. Participants learned 2D sketching techniques, including using basic tools (line, rectangle, circle) and applying constraints and dimensions to create fully defined sketches. A hands-on activity involved designing a simple 2D mechanical part, reinforcing their understanding. The day concluded with a recap and an assignment to practice creating defined 2D profiles.

Day 2 (26-11-2024):

On Day 2 Participants focussed on 3D modelling in Solid Edge, focusing on transforming 2D sketches into 3D models using tools like Extrude, Revolve, and Sweep. Advanced features such as Fillets, Chamfers, and Patterns were demonstrated to refine designs. Participants practiced creating simple components like shafts and brackets, applying parametric modelling techniques. The session emphasized accuracy and feature operations through hands-on activities. The day ended with an assignment to model a basic 3D part.





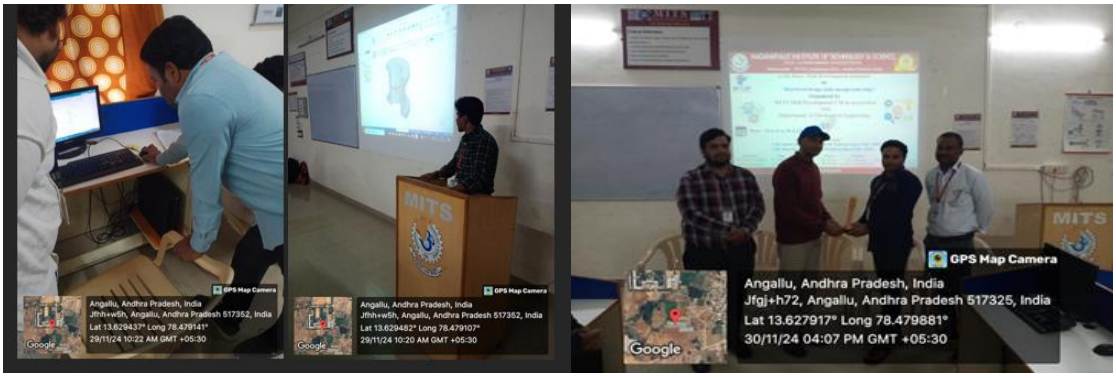


Day 3 (27-11-2024):
Day 3 focused on advanced features like assembly modeling, parametric design, and design automation in Solid Edge. Participants learned to align components using mating constraints, create adaptable parametric models, and utilize tools for efficient updates. The session included a hands-on assembly project and an assignment to enhance modelling skills.

Day 4 (28-11-2024):
Mr. Nara Siva Balaji covered the use of components and subassemblies for building hierarchical structures, as well as techniques for organizing and managing large assemblies. Participants also explored assembly components' relationships, using parameters to drive changes across parts. Hands-on activities included assembling mechanical systems like a gearbox or a robotic arm, ensuring that each part functioned correctly within the larger system and ample amount of time was given for practice.

Day 5 (29-11-2024):
Day 5 focused on applying acquired skills to a real-world design project. Participants were assigned to create a mechanical tool, fixture, or product component with a detailed 3D model and a fully constrained assembly. The project involved problem understanding, part modeling, and assembly creation. Basic simulations were conducted for design verification. The day concluded with final design refinements based on feedback and results.

Day 6 (30-11-2024):
On Day-6 speakers of the session Dr. Jagesh Kumar Prusty & Mr. Nara Siva Balaji allowed participants to ask questions and troubleshoot issues like over-constrained or under-defined sketches with necessary guidance. A recap of key concepts, including the Solid Edge interface and sketching tools, was provided. For the assignment, participants were asked to create two fully defined 2D sketches of mechanical components, ensuring proper dimensions and constraints.



Valedictory Ceremony (3:30 PM):
The Skill Development Programme concluded with a valedictory ceremony in the Siemens Lab (East block -019). Dr. Sivaiah, Associate Dean, R&D along with the coordinators, resource persons, and participants, attended the closing event. Mr. P Mohammed Rizwan Ali highlighted the vast opportunities in CAD & SOLID EDGE and projects that students can pursue, emphasizing the significance of mastering CAD Packages. Dr. D. Arun Kumar provided an overview of additional CAD software options and their features, expanding the students' understanding of industry tools. The event closed with a felicitation ceremony for the resource persons, followed by a heartfelt vote of thanks from Dr. D. Arun Kumar, recognizing the efforts of all who contributed to the workshop's success.