



**An Autonomous Institute**  
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## **Two days STTP on “AUTODESK FUSION 360”**

**on 18<sup>th</sup> and 19<sup>th</sup> October 2024**

### **Two days STTP on “AUTODESK FUSION 360”**

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The Short-Term Training Program (STTP) on **Autodesk Fusion 360** was organized with the primary objective of equipping faculty members with essential skills in computer-aided design (CAD), computer-aided engineering (CAE), and computer-aided manufacturing (CAM) using Autodesk Fusion 360. This software is an industry-standard tool that enables 3D modeling, simulation, and visualization, widely used across engineering, architecture, and design fields.

Given the increasing demand for integrated design solutions in academia and industry, this STTP aimed to familiarize faculty members with the practical applications of Autodesk Fusion 360 and how it can be incorporated into teaching and research.

#### **Objectives**

The STTP aimed to:

- Introduce the participants to the fundamental features of Autodesk Fusion 360.
- Provide hands-on experience in 3D design, simulation, and CAM.
- Train faculty to integrate Autodesk Fusion 360 into their curriculum to enhance teaching and learning outcomes.
- Promote collaboration among faculty members from different disciplines through shared projects and designs.

#### **Details of the FDP**

- **Dates:** 18<sup>th</sup> and 19<sup>th</sup> October 2024
- **Venue:** CAED Lab of Mechanical Department
- **Total Participants:** 33 faculty and 5 instructors from Civil, Mechanical, Aeronautical and Aerospace Engineering Departments.

The FDP was conducted through 2 days of interactive sessions and hands-on practice. Each session was designed to ensure that participants not only learned the theoretical aspects of the software but also gained practical exposure to the real-world applications of Autodesk Fusion 360.

### **Resource Persons**

The program was led by a Autodesk team professionals with extensive experience in CAD, CAE, and CAM technologies. The key resource persons is Mr. Mohan Murali, Expert in 3D Modeling and Simulation, Autodesk Certified Trainer. Their vast experience and real-time projects provided participants with both the technical depth and practical understanding required to master Autodesk Fusion 360.

### **Topics Covered**

The FDP covered a wide range of topics to ensure a comprehensive understanding of the Autodesk Fusion 360 environment. Below is a brief overview of the key topics:

#### **1. Day 1: Introduction and Overview**

- Overview of Autodesk Fusion 360
- Understanding the user interface
- Introduction to 2D sketching and constraints
- Basics of parametric modeling
- Creating 3D models from sketches
- Tools like Extrude, Revolve, Sweep, and Loft
- Assembly of components
- Design iterations and version control

#### **2. Day 2: Advanced Modelling and Simulation**

- Advanced sculpting and freeform modelling
- Surface modeling techniques
- Introduction to stress analysis and thermal simulations
- Finite Element Analysis (FEA) applications
- Introduction to CAM tools
- CNC machining with tool path generation
- 3D printing and its workflow integration
- Exporting files for manufacturing

**Hands-on Training:** A crucial aspect of this FDP was the hands-on sessions where participants were given the opportunity to apply what they learned. During these sessions, participants worked on their own design projects using Autodesk Fusion 360, guided by the resource persons. They explored real-world applications, focusing on industry-relevant design problems.

Some of the exercises included:

- Designing mechanical parts like gears, shafts, and assemblies.
- Simulating load conditions on designed components to analyse stress and deformation.
- Creating CAM setups for 3D printing or CNC manufacturing.

### **Outcomes and Conclusion**

At the end of the STTP, participants were well-versed in:

- Creating 2D sketches and 3D models using Autodesk Fusion 360.
- Performing simulations and analyzing designs for optimization.
- Using CAM for manufacturing processes like CNC machining and 3D printing.
- Understanding how to implement Autodesk Fusion 360 in academic and research projects.

This FDP successfully met its objectives of upskilling faculty members in advanced CAD/CAM tools. By equipping educators with industry-standard design tools, this program will benefit students and enhance the quality of instruction in engineering and design disciplines. All the instructors were trained in installing the software. Fusion 360 is successfully installed in all the systems of the CAED Lab (Room No. 24) of Mechanical Engineering Department. All the faculty attended the STTP has got 250 free licenses which can be utilized to install further in any of the labs of interest.

Two Days STTP successfully completed with the Vote of Thanks given by **Dr. A C Niranjanappa** , Dean Research, MVJCE.

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12(B) status, Accredited by NAAC



Two Day STTP  
on

"AUTODESK FUSION"

Resource Speaker

Mr. Anil Ghaste

Technical Director, ISCOT, Autodesk Learning Partners

Presided by

Dr. Uma Maheswaran

Principal, MVJCE, Bangalore

Date: 18<sup>th</sup> & 19<sup>th</sup> October 2024

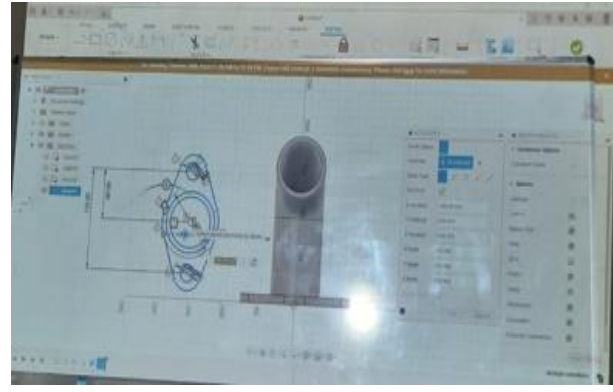
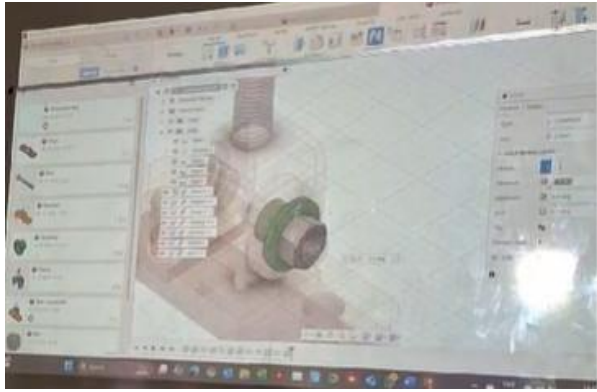
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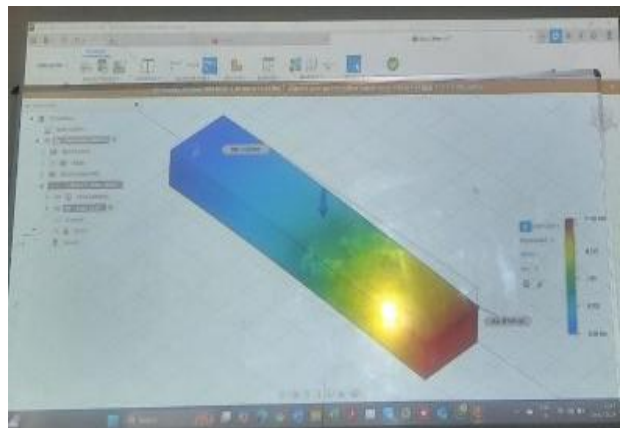
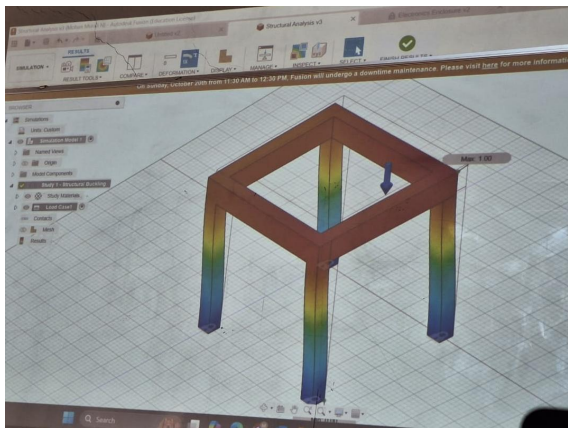
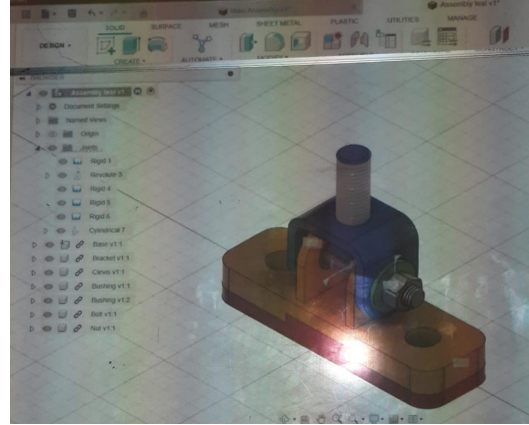
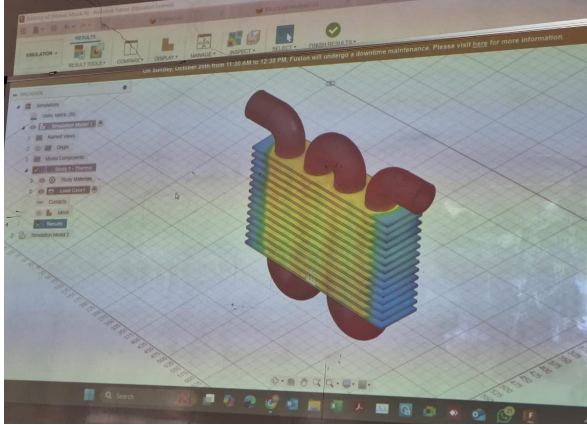


Introduction of **Fusion 360** by Resource speaker Mr. Mohan Murali, Trainer, Autodesk Team



**Hands Experience Session**





**Few of the examples in Hands on Training**



**Faculty attended STTP with the resource person (at Center)**