

EV Chassis Design and Failure Analysis

Overview

The Mechanical Engineering Department, MET's Institute of Engineering, Nashik, offers a focused, hands-on internship/training program on **EV Chassis Design and Failure Analysis**. This **four-week (25-day)** internship is designed for engineering students. This program is designed to provide students with industry-relevant skills in electric vehicle structural design, analysis, and design improvement using professional engineering software.

Electric vehicles demand lightweight yet structurally robust chassis systems. This internship introduces students to motorcycle/scooter EV chassis architecture, load paths, and design constraints, followed by detailed CAD modeling and structural validation using FEA tools. Students will identify weak regions, evaluate stresses and deformations, and propose design improvements.

Internship / Training Highlights and Core Module

1. Introduction to EV chassis architecture, load paths, and design requirements.
2. 2D layout preparation and 3D CAD modeling of tubular scooter chassis.
3. Frame geometry refinement and design optimization.
4. Meshing strategy, boundary condition definition, and load case formulation.
5. Static structural analysis (stress, deformation, factor of safety).
6. Modal analysis (natural frequencies and mode shapes).
7. Documentation and technical report preparation.

1. Eligibility and Internship Details

Detail	Specification
Department	Mechanical Engineering Department, MET's Institute of Engineering, Nashik
Internship Area	Mechanical Engineering Department
Duration	4 Weeks (25 days in the month of January/ February 2026)
Working Mode	Offline
Working Hours	2 – 4 Hours per day
No. of Students	08
Eligibility	All branches of Engineering (2nd Year, 3rd Year & Final Year) students.
Pre-requisites	Not Required
Last Date to Apply	30 December 2025

2. Expected Learning Outcomes

- **To understand the fundamentals of EV chassis design**, including scooter and motorcycle architecture, load paths, design constraints, and basic frame geometry.
- **To develop complete EV chassis design models** by creating 2D layouts and 3D CAD frames, followed by meshing, application of boundary conditions, and definition of realistic load cases.
- **To perform and interpret FEA analyses (static and modal)** to identify critical regions, evaluate stress, deformation, and factor of safety, and propose design improvements with proper technical documentation.

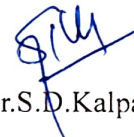
3. Deliverables and Evaluation

- Successful completion of the internship will earn participants a Certificate of Completion from the Mechanical Engineering Department, MET Bhujbal Knowledge City, Nashik..



Dr.S.K.Dahake / Dr.S.P.Kakade

Internship/Training/Boot camp Coordinator



Dr.S.D.Kalpande

H.O.D