

Electric Vehicle

Design & Development





“Accelerate through **Innovation**”

The Government of India and the Automotive Industry have a clear roadmap to go towards Electric Vehicles. The Indian government has created momentum through its Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME) schemes that encourage the adoption of electric vehicles (EV).

New Platforms

are required to meet new standards and pose new challenges like re-distribution of weight and vehicle dynamics, varying safety concerns, new materials, impact on NVH and acoustics, electronics, control and cooling variations and newer methodologies for certification.

Softwares

- Cradle CFD
- Marc
- Digimat
- Nastran
- Actran
- Romax

Duration
60 Hours

“An array of **Expertise**”

Students undergoing this course will have exposure to cutting-edge and high demand software suite of solutions being used by Industry Experts for the Design, Simulation, Testing and Development of Electric Vehicles.

Since the acceleration of the EV adoption is high, the requirement of trained professionals who could aid the EV development will spike up and candidates with expertise in it could obtain a significant advantage.



Modules

- Overview of NV, Challenges & Simulation Solutions for Electric Vehicles
- Introduction to Acoustics using **Actran**
- Basic Concepts in **Actran**
- E-drive / Transmission Design (**Romax**)
- Light weighting (**Digimat**)
- Internal & External Thermal Flow Management (**Cradle**)

Customer Stories



RENAULT

Challenge

End users expect electric vehicles to be very quiet. Renault needs to guarantee NVH requirements of new motors before physical prototyping in the development of a new electric powertrain.

Solution

The **MSC Nastran** software from Hexagon reads electromagnetic forces, calculated externally. Vibration levels obtained by MSC Nastran are input into **Actran** acoustics software to predict the radiating noise.



Challenge

GKN's challenge was to develop more powerful and efficient transmissions for greener electric vehicles, in order to capitalise on new market opportunities without trade-offs in durability, noise and vibration.

Solution

With **Hexagon's Romax solutions**, a strategy was identified of gear macro geometry optimization for efficiency, NVH and durability.

Overview

ImageGrafix Academy, a training division of ImageGrafix Software Solutions, is the Only Authorized Training partner of **HATCH** (Hexagon Authorized Training Centre for Higher Education), a division of Hexagon Manufacturing Intelligence, offers training on instructor-led, state-of-the-art facilities and virtual training services to help people master themselves with adaptive new solutions.



- Withholds a succeeding legacy of 25 years in Engineering and Software solutions and more than a decade in the training industry,
- Our Infrastructure comprises of latest in-demand technologies, virtual software access for practical sessions, library references, Noteworthy course materials and Digital Learning Management System - LMS.
- Competency-based curriculum.

Our Forte

- Highly skilled & industry-experienced faculties to deliver world-class training.
- Global Certification benefit, with the authorized logo of software developer.
- Our job-oriented training help students meet the industry requirements and get the spotlight in the market.

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