



DARWIN Automotive

(Registered under Udyog Aadhar, UAN: KR03A0133927)

DAT-101 Course Handout

1. Course Description:

A Comprehensive Course on EV 2 Wheelers is designed for Undergraduate engineering students, budding entrepreneurs, academic scholars.

The course has been specifically designed to help prepare candidates for the ever-increasing e-bike market sector. It provides the skills needed to confidently set up, design and manufacture, service and repair a broad spectrum of electric bikes along with an understanding of the specific standards and legal aspects that apply to them. It quickly gets candidates up to speed with all the latest e-bike technology and equips them with the skills needed to work on today's rapidly advancing and ever more complex workshop environment.

It delivers a complete overview and deep-dives into the legal aspects of setting up an EV 2 wheeler start-up, Schemes and subsidies by the Govt. of India, different types of motor systems, Speed controllers, etc being used by all the leading e-bike manufacturers. The last day will include 3 case studies delivered by the founders and directors of the company.

This is the most comprehensive e-bike training course available in India.

2. Who is the Course suitable for?

Candidates are expected to be competent engineers with a good level of experience from designing mechanical and electrical components and systems. Should also be well versed with structure and working parts of a bicycle. A strong understanding of automotive industry rules and regulation is a plus. Budding entrepreneurs with basic business acumen can also be hugely benefited by this course.

3. What is the duration of the Course?

A Comprehensive Course on EV 2 Wheelers is a 3 day course that can be completed online. More details can be found under Course Content and Schedule.

4. How much does it cost?

The course costs ₹****. The price includes all course materials and DARWIN certification.

5. What do I receive when I pass?

Course Content

DAY 1	<ol style="list-style-type: none">1. What is an eBike? Parts and Working? Why is it a competitive and exciting industry? What are the different classifications?2. Legal aspects of setting up a EV 2 wheeler manufacturing business3. Schemes and Subsidies by Govt. of India4. Why is setting up an EV 2wheeler company desirable?5. Types of EV 2 wheeler motors used6. Topologies used in EV ESC (Electronic Speed Controller)7. Design and construction of a Sensorless BLDC Motor Controller8. Basics of PCB Design9. Hands on PCB circuit design10. Electrical Safety considerations
DAY 2	<ol style="list-style-type: none">1. Parts of an eBike, eScooter and e-Motorcycle2. Sourcing of locally manufactured parts3. What difficulties are faced while sourcing the parts4. EV Batteries, types, parts of a EV 2 wheeler Battery pack5. Battery Pack Sizing6. Sourcing Battery packs and individual components7. eBike Frame design and manufacturing8. Sourcing materials for frame manufacturing9. Eligibility, Procedure, Technicalities and Funding for setting up a EV 2wheeler Manufacturing Unit
DAY 3	<ol style="list-style-type: none">1. Startup Case Study 1- MASTiEBIKES (By Founder & CEO, Shravan B R)2. Startup Case Study 2- Raj Automotives (By Founder & CEO, Raj Mehta)3. EV Charging Infrastructure Case Study (Mr. Pratap Patil, Director, EVCOIndia)

