



ELECTRIC VEHICLES - PART 1

PROF. AMIT JAIN

Department of Electrical Engineering
IIT Delhi

PRE-REQUISITES : BE (Electrical)

INTENDED AUDIENCE : Interested Students

COURSE OUTLINE :

This course will be a first level course on electric vehicle. Students will be able to understand the operation of battery driven electric vehicle. The course will start with introduction section which will enable the students to understand the focus areas that come under the umbrella of electric vehicles. Then the course will start covering this focus areas one by one such as vehicle dynamics, Motors, Power Electronics, Batteries, Charging etc. The most important part of this course will be that each topic will be analyzed and demonstrated through Matlab Simulink, so that the grip of the subject will be strong and the knowledge acquired will be useable in real time applications.

ABOUT INSTRUCTOR :

Prof. Amit Kumar Jain is presently working as Associate Professor in Department of ElectricalEngineering, IIT Delhi. He is done his Ph.D and M.S from Department of ElectricalEngineering, I.I.Sc, Bangalore and spend around two years in General Electric GlobalResearch Center before joining IIT Delhi in 2012. He expertise includes electric drives forrenewable and electric vehicle application. He has also started a course on ElectricVehicles in IIT Delhi which is now been converted to NPTEL video course.

COURSE PLAN :

Week 1: Introduction to Electric Vehicle

Week 2: Vehicle Dynamics: Modelling and Simulation

Week 3: Fundamental of Drives and DC Machine Modeling

Week 4: DC Machine Drives and Control of EV Using DC Machine