COURSE OUTLINE:

This course will be a first level course on electric vehicles. Students will be able to understand the operation of battery driven electric vehicles. 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 these 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 usable in real time applications.

ABOUT INSTRUCTOR:

Amit Kumar Jain is presently working as Associate Professor in Department of Electrical Engineering, IIT Delhi. He has done his Ph.D and M.S from Department of Electrical Engineering, I.I.Sc, Bangalore and spent around two years in General Electric Global Research Center before joining IIT Delhi in 2012. His expertise includes electric drives for renewable and electric vehicle application. He has also started a course on Electric Vehicles in IIT Delhi which is now being converted to NPTEL video course.

COURSE PLAN:

Week 01 : Introduction to Electric Vehicle

Week 02 : Vehicle Dynamics: Modelling and Simulation

Week 03 : Fundamental of Drives and DC Machine Modeling

Week 04 : DC Machine Drives and Control of EV Using DC Machine