

Lesson Plan

Name of the Faculty : Sh. Rahul Nehra
Discipline : Electrical Engineering
Semester : 5th Semester
Subject : Electric Vehicle Technology
Lesson Plan Duration : 14 Weeks

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1 st	1	Introduction to Electric Vehicles (EV)	1 st	Draw block diagram of Electric Vehicle and identify its various parts.
	2	History and evolution of Electric Vehicle		
2 nd	3,	Policies and regulations related to EV in India	2 nd	Develop schematic diagram of hybrid electric vehicle and its parts.
	4	Needs and Importance of Electric Vehicle		
3 rd	5	Advantages and Disadvantages of Electric Vehicles	3 rd	Prepare a report on batteries used in EV and HEV.
	6	Types of EVs- Battery Electric Vehicle (BEV)		
4 th	7	PHEV (Plug in Hybrid Electric Vehicle) and Hybrid Electric Vehicle (HEV)	4 th	Diagnose, repair and maintenance of batteries used in Electric Vehicle.
	8	Mandatory safety precautions while handling Electric Vehicle		
5 th	9,10	Working principle and Control of motors used in Electric Vehicles- Brushless DC (BLDC) motor	5 th	Study of various types of braking system used in EV.
6 th &7 th	11	Switched Reluctance Motor (SRM)	6 th	Demonstration of wiring layout of Electric Vehicles using model (if available) or watching videos
	12,13	Permanent Magnet Synchronous Motor (PMSM).	7 th	Prepare test procedure for electrical equipment used in Electric vehicle.
	14	Advantages and disadvantages of above motors		
8 th	15	Electric Vehicle Charger	8 th	List safety procedures and schedule for handling HEVs and EVs.
	16	Main components of EV Charger, EV Charging Sockets		
9 th	17	Charging of Electric Vehicle	9 th	Case study of Electric Vehicle available in Indian market and study the technology used in it.
	18	Safety precautions for EV charging		
10 th &11 th	19	Types of batteries used in EVs- dry batteries	10 th	Measurement of voltage of battery installed in Electric vehicle.
	20,21	Construction and working of Lithium Ion batteries		

	22	Charging & discharging tests of Li-Ion batteries	
12 th	23	Regenerative braking in EVs	
	24	Battery management system	
13 th	25	Battery cooling system	
	26	Overview of Hybrid Electric Vehicles	
14 th	27	Types of HEV (overview) like gasoline ICE & battery, diesel & battery, Battery & Fuel cell, battery capacitor, battery & flywheel etc	
	28	Comparison with EV, advantages and disadvantages of HEV	