Lesson Plan

Name of the Faculty :

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
1st	1	Introduction to Electric Vehicles (EV)	1st	Draw block diagram of Electric Vehicle and identify its various parts.
	2	History and evolution of Electric Vehicle		
2nd	3,	Policies and regulations related to EV in India	2nd	Develop schematic diagram of hybrid electric vehicle and its parts.
	4	Needs and Importance of Electric Vehicle		
3rd	5	Advantages and Disadvantages of Electric Vehicles	3rd	Prepare a report on batteries used in EV and HEV.
	6	Types of EVs- Battery Electric Vehicle (BEV)		
4th	7	PHEV (Plug in Hybrid Electric Vehicle) and Hybrid Electric Vehicle (HEV)	4th	Diagnose, repair and maintenance of batteries used in Electric Vehicle.
	8	Mandatory safety precautions while handling Electric Vehicle		
5th	9,10	Working principle and Control of motors used in Electric Vehicles- Brushless DC (BLDC) motor	5th	Study of various types of braking system used in EV.
6th&7th	11	Switched Reluctance Motor (SRM)	6th	Demonstration of wiring layout of Electric Vehicles using model (if available) or watching videos
	12,13	Permanent Magnet Synchronous Motor (PMSM).	7th	Prepare test procedure for electrical equipment used in Electric vehicle.
	14	Advantages and disadvantages of above motors		
8th	15	Electric Vehicle Charger	8th	List safety procedures and schedule for handling HEVs and EVs.
	16	Main components of EV Charger, EV Charging Sockets		
9th	17	Charging of Electric Vehicle	9th	Case study of Electric Vehicle available in Indian market and study the technology used in it.
	18	Safety precautions for EV charging		
10th&11th	19	Types of batteries used in EVs- dry batteries	10th	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	
12th	23	Regenerative braking in EVs	
	24	Battery management system	
13th	25	Battery cooling system	
	26	Overview of Hybrid Electric Vehicles	
14th	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	