Lesson Plan

Name of Faculty : Sh.Sunny Brar
Discipline : 6th Sem Mechanical Engg.
Subject :Automobile Engineering
Lesson Plan duration : 15 Weeks
Work load (Lecture/Practical) per week (in hours): 3L and 4P

Week	Theory		Teacher sign	Practical		Teacher sign
	Lecture day	Topic(Including assignment/test)		Practical Day	Topic	
1		**UNIT - 01 Introduction**			1 Fault and their remedies in Battery Ignition system	
	1	Automobile and its development				
	2	Various types of automobiles manufactured in India				
	3	Layout of chassis				
2	4	Types of drives-front wheel, rear wheel, four wheels				
		Electric and Other Modern Vehicles:			2 Adjustment of Head Light Beam (ii) Wiper and Indicators.	
	5	Introduction; History of Hybrid and Electric Vehicles; Social and Environmental importance of Hybrid and Electric Vehicles Components, Vehicle mechanics: Roadway fundamentals, Vehicle kinetics, Dynamics of vehicle motion				
	6	Propulsion System Design, Motor sizing				
	7	Introduction of CNG/PNG in Automobiles, Introduction to self-driven cars				
	8	**UNIT-II Transmission System** Clutch - Functions, Constructional details of single plate			3 Dismantling and inspection of (i) AC Pump (ii) SU Pump	
	9	Multi plate friction clutches, Cone clutch, Hydraulic clutch				
4	10	Gear Box - Functions, Working of sliding mesh, constant mesh and synchromesh gear box				
	11	Torque converter and overdrive			4 Dismantle (i) rear axle (ii) differential and find out the gear ratio of crown wheel	
		Introduction to Automated Manual Transmission				
	12	Automatic transmission and Continuously Variable Transmission (CVT)				
5		Propeller shaft and rear axle - Functions			5 Fault finding practices on an automobile - four wheelers (petrol/ diesel vehicles).	
	13	Universal joint, Differential, Different types of rear axles and rear axle drives				
	14	**Sessional-I**				
	15	Wheels and Tyres-Types of wheels				
6	16	Types and specifications of tyres used in Indian vehicles, Toe in, Toe out			6 Servicing/Tuning of a 2 wheeler/4 wheeler.	
	17	camber, caster, kingpin inclination, Wheel balancing and alignment, Factors affecting tyre life				
	18	**PTM**				
7	19	**UNIT III Steering System** Function and principle of steering system, steering geometry			7 Servicing of hydraulic brakes : a) adjustment of brakes	
	20	Types of steering mechanism-Ackerman				
	21	Davis Steering Mechanism				
8	22	Types of steering gears - worm and wheel, rack and pinion			8. Learning Driving Practice.	
	23	Power steering-Hydraulic and Electrical				
	24	**Braking System** Function of braking system, Constructional details and working of mechanical brake			9 Testing and Charging of an automobile battery	

9	25	Hydraulic, air and vacuum brake, Power brake			and measuring cell voltage and specific gravity of electrolyte.	
	26	Relative merits and demerits. Details of master cylinder				
	27	wheel cylinder, Concept of brake drum, brake lining/pad and Brake adjustment				
10	28	**Sessional-II**				
		Introduction to Anti-lock Brake System (ABS)				
	29	Electronic Brake-force Distribution (EBD) and its working, Regenerative braking				
	30	**UNIT IV Suspension System** Function of suspension system and types of Coil spring				
11	31	Leaf spring, Air suspension, Shock Absorber (Telescopic type) –Function, construction and working			10. Rotation of tyres inflation of tyres and balancing of wheels	
	32	**PTM**				
	33	**Battery** Functions and types, Constructional details of Lithium ion batteries				
12	34	Specification of battery-capacity, rating , number of plates				
	35	selection of battery for particular use, Battery charging				
	36	chemical reactions during charge and discharge, Maintenance of batteries				
	37	Checking of batteries for voltage and specific gravity				
	38	Batteries for electric and hybrid vehicles.				
	39	Battery pack Design, Properties of Batteries				
14	40	**UNIT V Dynamo and Alternator** Dynamo- Function and details, Regulators - voltage current and compensated type				
	41	Cutout- construction, working and their adjustment				
	42	Alternator- Construction and working, charging of battery by alternator. Introduction to Integrated starter-alternator				
15		wiring Diagram of an Automobile				
	43	**Safety Measures** Road safety symbols & rules. Various safety star rating systems tests of vehicles. Air bags and other safety equipments such as bull guard, cameras, sensors				
	44	Advance Driver Assistance Systems (ADAS)				
	45	**Sessional-III**				
16	46	Revision				
	47	**PTM**				
	48	Revision				