

MECHANICAL ENGINEERING DEPARTMENT

Session 2024-2025(6th semester)

Subject:-Automobile Engg.

Load:-3 hrs Theory ,2 hrs Practical

Lesson Plan

Week	Theory		Practical	
	Lecture Day	Topic (including assignments /tests)	Practical Day	Topic
Week -1st	1 st	Automobile and its development	1 st	Overview of the subject, Importance in industry & Applications of the subject.
	2 nd	Various types of automobiles manufactured in India.		
	3 rd	Layout of chassis		
Week 2nd	1 st	Types of drives-front wheel, rear wheel, four wheel.	1 st	Fault and their remedies in Battery Ignition system Magnetic Ignition system
	2 nd	Introduction to electric and hybrid vehicles.		
	3 rd	Component, Vehicle mechanics, Vehicle kinematics		
Week 3rd	1 st	Dynamics of vehicle motion, Motor sizing,	1 st	Demonstration of (i) Head Light Model (ii) Wiper and Indicators.
	2 nd	CNG and PNG in automobile, Introduction of self driven cars		
	3 rd	Revision		
Week 4th	1 st	Chapter-2 Transmission System Clutch - Function, Constructional details of single plate and multiplate friction clutches,	1 st	Demonstration of (i) Head Light Model (ii) Wiper and Indicators.
	2 nd	Centrifugal and semi Centrifugal clutch, Hydraulic Clutch		
	3 rd	Gear Box- Function, Concept of Sliding mesh, Constant mesh		
	1 st	Synchro mesh gear box, Torque converter and Overdrive	1 st	Demonstration of (i) AC Pump (ii) SU Pump (iii) Master Cylinders.

Week 5th	2 nd	Types of drives – Front wheel, Rear wheel, Four Wheel.		
	3 rd	Function of Propeller shaft, Universal joint,)		

		Differential and Different Types of Rear axles and Front Axles.		
Week 6th	1 st	Wheels and Tyres - Types of wheels, Types and specifications of tyres used in Indian vehicles, Wheel balancing	1 st	Demonstration of (i) rear axle (ii) differential (iii) steering system.
	2 nd	Assignment on Chapter -3		
	3 rd	<u>Steering System-3</u> Function and principle of Ackerman and Davis steering mechanism,		
Week 7th	1 st	Types of Steering Gear boxes – Worm and nut, worm and wheel, Worm and Roller	1 st	Fault finding practices on an automobile - fourwheelers (petrol/ diesel vehicles).
	2 nd	Rack and pinion, Power steering system		
	3 rd	Alignment of wheels – Toe in, toe out, camber, caster, kingpin inclination		
Week 8th	1 st	<u>TEST ON CHAPTER -3</u>	1 st	Fault finding practices on an automobile - fourwheelers (petrol/ diesel vehicles).
	2 nd	<u>Braking system-4</u> Constructional details and working of Mechanical, Hydraulic brake.		
	3 rd	Concept of Air and Vacuum brake, brake adjustment		
Week 9 th	1 st	Introduction to Anti lock Brake system and its working	1 st	Tuning of an Automobile engine.
	2 nd	Assignment		
	3 rd	Mock Test		
Week 10th	1 st	<u>Suspension System-5</u> Function, Types of Suspension System	1 st	Driving practice on a 4-wheeler
	2 nd	Working of coil spring, leaf spring.		
	3 rd	Concept of Air suspension		
Week 11th	1 st	Shock absorber.	1 st	Driving practice on a 4-wheeler
	2 nd	Revision		
	3 rd	Test on Chapter		

Week 12th	1st	Battery Constructional details of lead Acid cell Battery	1st	Charging of an Automobile Battery and Measuring cell voltage and Specific Gravity of Electrolyte.
	2nd	Specific gravity of electrolyte, effect of temperature on specific gravity,,		
	3rd	Specification of battery-capacity, rating , number of plates,		
Week 13th	1st	selection of battery for particular use, Battery charging,	1st	Changing of wheels and inflation of Tyres, Balancing of Wheels
		chemical reactions during charge and discharge,		
	3rd	Maintenance of batteries		
Week 14th	1st	Checking of batteries for voltage and specific gravity	1st	Checking spark gap and valve clearance
	2nd	Batteries for electrical and hybrid vehicle		
	3rd	Assignment		
Week 15th	1st	Chapter-7 Dyanamo and Alternator Dynamo - Function and details,	1st	Cleaning and Adjusting a Carburetor
	2nd	Regulators - voltage current and compensated type,		
	3rd	Cutout - construction, working and their adjustment,		
Week 16th	1st	Alternator - Construction and working,	1st	Visit to Automobile Workshop
	2nd	Charging of battery by alternator. Introduction to Integrated starteralternator,		
	3rd	wiring Diagram of an Automobile.		

Subject Incharge-Ms Jyoti

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