

GOVT. POLYTECHNIC BOLANGIR		LESSON PLAN
Discipline : Mechanical	Semester: 6th	Name of the Teaching Faculty : <i>Kumar Gyanadeep</i>
Subject :AUTOMOBILE ENGINEERING AND HYBRID VEHICLES	No. of Days / per week class allotted : 4	Semester From date : 05.02.2025 To Date : 17.05.2025 No. of Weeks: 15
Week	Class Day	Topics
05 Feb to 08 Feb	1st	Automobiles: Definition, need
	2nd	Automobiles: classification: Layout of automobile chassis with major components (Line diagram)
	3rd	Clutch System: Need, Types (Single & Multiple)
	4th	Clutch System: Working principle with sketch
10 Feb to 15 Feb	1st	Gear Box: Purpose of gear box, Construction and
	2nd	Gear Box: working of a 4 speed gear box
	3rd	Concept of automatic gear changing mechanisms
	4th	Concept of automatic gear changing mechanisms
17 Feb to 22 Feb	1st	Propeller shaft: Constructional features
	2nd	Propeller shaft: Constructional features
	3rd	Differential: Need, Types
	4th	Differential: Working principle
24 Feb to 01 Mar	1st	Braking systems in automobiles
	2nd	Braking systems in automobiles: Need and types
	3rd	Mechanical Brake
	4th	USES OF Mechanical Brake
03 Mar to 08 Mar	1st	Hydraulic Brake
	2nd	Hydraulic Brake
	3rd	Air Brake
	4th	Air Brake
10 Mar to 15 Mar	1st	Air assisted Hydraulic Brake
	2nd	Air assisted Hydraulic Brake
	3rd	Vacuum Brake
	4th	Vacuum Brake
17 Mar to 22 Mar	1st	Describe the Battery ignition
	2nd	Describe the Magnet ignition system
	3rd	Spark plugs: Purpose, construction
	4th	Spark plugs: specifications
24 Mar to 29 Mar	1st	State the common ignition troubles and its remedies
	2nd	State the its remedies
	3rd	Description of the conventional suspension system for Rear and Front axle
	4th	Description of the conventional suspension system for Rear and Front axle
31 Mar to 05 Apr	1st	Description of independent suspension system used in cars (coil spring and tension bars)
	2nd	Constructional features and working of a telescopic shock absorber
	3rd	Engine cooling: Need and classification
	4th	4.2 Describe defects of cooling and their remedial measures

07 Apr to 12 Apr	1st	Describe the Function of lubrication
	2nd	4.4 Describe the lubrication System of I.C. engine
	3rd	Describe Air fuel ratio
	4th	5.2 Describe Carburetion process for Petrol Engine
14 Apr to 19 Apr	1st	Describe Multipoint fuel injection system for Petrol Engine
	2nd	5.4 Describe the working principle of fuel injection system for multi cylinder Engine 5.5 Filter for Diesel engine
	3rd	Describe the working principle of Fuel feed pump and Fuel Injector for Diesel engine
	4th	Introduction, Social and Environmental importance of Hybrid and Electric Vehicles
21 Apr to 26 Apr	1st	Description of Electric Vehicles, operational advantages
	2nd	present performance and applications of Electric Vehicles
	3rd	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations;6.5 Drive train
	4th	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations;6.5 Drive train
28 Apr to 03 May		Solar powered vehicles
		Solar powered vehicles
		Battery for Electric Vehicles, Battery types and fuel cells
05 May to 10 May		Revision
		Class test
		Q & A discussion
		Doubt Clearing
12 May to 17 May	1st	Revision
	2nd	Class test
	3rd	Q & A discussion
	4th	Doubt Clearing

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03/02/2025