

• **GOVERNMENT POLYTECHNIC JAGATSINGHPUR**

**MECHANICAL ENGINEERING DEPARTMENT
LESSON PLAN**

Discipline :- MECHANICAL	Semester:- 6TH	Name of the Teaching Faculty OM PRAKASH KAR
Subject:- AUTOMOBILE ENGINEERING &HYBRID VEHICLE	No of Days/per Week Class Allotted :-04	Semester :15 WEEKS
Course Code: TH 2		
Week	Class Day	Theory/ Practical Topics
1 st	1 st	Automobiles: Definition
	2 nd	Automobile- need
	3 rd	classification
	4 th	classification
2 nd	1 st	Layout of automobile chassiswith major components
	2 nd	Major components
	3 rd	Major components
	4 th	Major components
3 rd	1 st	Layout of automobile chassiswith major components
	2 nd	(Line diagram)
	3 rd	Clutch System: Need, Types (Single & Multiple)
	4 th	Clutch System Single
4 th	1 st	Working principle with sketch
	2 nd	Clutch system multiple
	3 rd	Working principle with sketch
	4 th	Gear Box: Purpose of gear box
5 th	1 st	Construction and working of a 4 speed gear box
	2 nd	Construction and working of a 4 speed gear box
	3 rd	Concept of automatic gear changing mechanisms
	4 th	Concept of automatic gear changing mechanisms
6 th	1 st	Propeller shaft: Constructional features
	2 nd	Propeller shaft: Constructional features
	3 rd	Differential: Need
	4 th	Types
7 th	1 st	Working principle
	2 nd	Braking systems in automobiles:
	3 rd	Need and types
	4 th	Mechanical Brake
8 th	1 st	Hydraulic Brake
	2 nd	Air assisted Hydraulic Brake
	3 rd	Vacuum Brake

	4 th	Describe the Battery ignition
9 th	1 st	Magnet ignition system
	2 nd	Spark plugs: Purpose, construction and specifications
	3 rd	State the common ignition troubles and its remedies
	4 th	Description of the conventional suspension system for front axle
10 th	1 st	Description of the conventional suspension system for rear axle
	2 nd	Description of independent suspension system used in cars (coil spring and tension bars)
	3 rd	Constructional features
	4 th	working of a telescopic shock absorber
11 th	1 st	Engine cooling: Need and classification
	2 nd	Describe defects of cooling
	3 rd	their remedial measures
	4 th	Describe the Function of lubrication
12 th	1 st	Describe the lubrication System of I.C. engine
	2 nd	Describe Air fuel ratio
	3 rd	Describe Carburetion process for Petrol Engine
	4 th	Describe Multipoint fuel injection system for Petrol Engine
13 th	1 st	Describe the working principle of fuel injection system for multi cylinder Engine
	2 nd	Filter for Diesel engine
	3 rd	Describe the working principle of Fuel feed pump
	4 th	Fuel Injector for Diesele engine
14 th	1 st	Introduction, Social and Environmental importance of Hybrid and Electric Vehicles
	2 nd	Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles
	3 rd	Battery for Electric Vehicles
	4 th	Battery types and fuel cells
15 th	1 st	Hybrid vehicles,
	2 nd	Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations
	3 rd	Drive train
	4 th	Solar powered vehicles