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Lesson Plan
Th 2 - Automobile & Hybrid vehicles.

GOVERNMENT POLYTECHNIC JAJPUR

A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

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LESSON PLAN

Discipline :	Semester:	Name of the Teaching Faculty:
Mechanical	6th	Mahesh Kumar Patra
Subject:	No. Of Days/Week	Semester From Date: 10/03/2022 To 30.06.2022
Automobile Engineering & Hybrid Vehicles	Class Allotted	No. Of Weeks : 15
Week	Class Day	Theory/Practical Topics
1st	1st	Automobiles: Definition, need and classification
	2nd	Layout of automobile chassis with major components (Line diagram)
	3rd	Clutch System: Need, Types (Single & Multiple)
	4th	Working principle with sketch: Different types of clutches
2nd	1st	Gear Box: Purpose of gear box, Types
	2nd	Construction and working of a 4 speed gear box
	3rd	Concept of automatic gear changing mechanisms
	4th	Propeller shaft: Constructional features and working
3rd	1st	Differential: Need, Types and Working principle
	2nd	Working of differential of 4-wheeler
	3rd	Review class
	4th	Assignment Evaluation & Class Test
4th	1st	Braking systems in automobiles: Need and types
	2nd	Mechanical Brakes
	3rd	Hydraulic Brake
	4th	Air Brake and Vacuum Brake
5th	1st	Air assisted Hydraulic Brake
	2nd	Review class
	3rd	Assignment Evaluation & Class Test
	4th	Battery ignition system: Schematic diagram, elements and working
5th	1st	Magnet ignition system: Schematic diagram, elements and working
	2nd	Spark plugs: Purpose, construction and specifications

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	3rd		Common ignition troubles and its remedies
	4th		Conventional suspension system for Rear and Front axle
7 th	1st		Independent suspension system used in cars (coil spring and tension bars)
	2nd		Constructional features and working of a telescopic shock absorber
	3rd		Review class
	4th		<i>Assignment Evaluation & Class Test</i>
8 th	1st		Engine cooling: Need and classification
	2nd		Cooling systems of IC engine
	3rd		Defects of cooling and their remedial measures
	4th		Engine lubrication: Need and classification
9 th	1st		Describe the Lubrication System of I.C. engine
	2nd		Review class
	3rd		<i>Assignment Evaluation & Class Test</i>
	4th	19	Fuels for Automobiles, Fuel Properties
10 th	1st	22	Air fuel ratio, Carburetor
	2nd	23	Carburetion process for Petrol Engine
	3rd	24	Multipoint fuel injection system for Petrol Engine
	4th	25	Air fuel ratio of diesel engine. Filter for Diesel engine
11 th	1st	31	Elements of fuel injection system of Diesel engine
	2nd		Working principle of fuel injection system for multi cylinder Engine
	3rd		Principle of Fuel feed pump and Fuel Injector for Diesel engine
	4th		Review class
12 th	1st		<i>Assignment Evaluation & Class Test</i>
	2nd		Introduction to Electric and Hybrid vehicles
	3rd		Social and Environmental importance of Hybrid and Electric Vehicles
	4th		Description of Electric Vehicles, operational advantages
13 th	1st		Present performance and applications of Electric Vehicles
	2nd		Battery for Electric Vehicles, Battery types and fuel cells
	3rd		Hybrid vehicles, Types of Hybrid and Electric Vehicles
	4th		Parallel, Series, Parallel and Series configurations
14 th	1st		Drive train
	2nd		Solar power generation and its application for automobiles

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	3rd	Solar powered vehicles
	4th	Review class
15 th	1st	<i>Assignment Evaluation & Class Test</i>
	2nd	<i>Discussion of previous year Question papers</i>
	3rd	<i>Discussion of previous year Question papers</i>
	4th	<i>Discussion of Possible Questions</i>

M. K. Patra
10-03-2022

Signature of Faculty