

LESSON PLAN

SUB: AUTOMOBILE ENGINEERING AND HYBRID VEHICLES

BRANCH:- MECHANICAL ENGG.

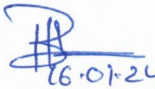
SEMESTER: 6th

NAME OF FACULTY: ER. SUMANTA BISWAL




**GOVERNMENT POLYTECHNIC,
BHADRAK**

SESSION:2023-24


Hod ,Mechanical
16.01.24


Academic Co-ordinator
16.01.24


Principal
Govt. Polytechnic, Bhadrak
16-01-24

Discipline: <u>MECHANICAL</u>	Semester: <u>6th</u>	Name of the Teaching Faculty: <u>SUMANTA BISWAL</u> <u>GF(Mechanical)</u>
Subject: AE&HV	No. of days/per week class allotted: 4	Semester From date: 16-01-2024 To date: 26-04-2024 No of weeks: 15
Week	Class Day	Theory Topics:
1 st	1 st	INTRODUCTION & TRANSMISSION SYSTEM:
	2 nd	Automobiles: Definition, need and classification: Layout of automobile chassis
	3 rd	Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
	4 th	Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box
2 nd	1 st	Concept of automatic gear changing mechanisms
	2 nd	Propeller shaft: Constructional features
	3 rd	Differential: Need, Types and Working principle
	4 th	BRAKING SYSTEM:
3 rd	1 st	Braking systems in automobiles: Need and types
	2 nd	Mechanical Brake
	3 rd	Hydraulic Brake
	4 th	Class Test
4 th	1 st	Air Brake
	2 nd	Air assisted Hydraulic Brake
	3 rd	Vacuum Brake
	4 th	IGNITION & SUSPENSION SYSTEM:
5 th	1 st	Describe the Battery ignition and 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 Rear and Front axle

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6 th	1 st	Description of independent suspension system used in cars (coil spring and tension)
	2 nd	Constructional features and working of a telescopic shock absorber
	3 rd	COOLING AND LUBRICATION:
	4 th	Engine cooling: Need and classification
7 th	1 st	Describe defects of cooling and their remedial measures
	2 nd	Describe the Function of lubrication
	3 rd	Describe the lubrication System of I.C. engine
	4 th	FUEL SYSTEM
8 th	1 st	Describe Air fuel ratio
	2 nd	Describe Carburetion process for Petrol Engine
	3 rd	Describe Multipoint fuel injection system for Petrol Engine
	4 th	Describe the working principle of fuel injection system for multi cylinder Engine
9 th	1 st	Filter for Diesel engine
	2 nd	Describe the working principle of Fuel feed pump and Fuel Injector for Diesel engine
	3 rd	ELECTRIC AND HYBRID VEHICLES:
	4 th	Introduction, Social and Environmental importance of Hybrid and Electric Vehicles
10 th	1 st	Introduction, Social and Environmental importance of Hybrid and Electric Vehicles
	2 nd	Introduction, Social and Environmental importance of Hybrid and Electric Vehicles
	3 rd	Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles
	4 th	Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles
11 th	1 st	Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles
	2 nd	Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles
	3 rd	Class Test
	4 th	Battery for Electric Vehicles, Battery types and fuel cells
12 th	1 st	Battery for Electric Vehicles, Battery types and fuel cells
	2 nd	Battery for Electric Vehicles, Battery types and fuel cells
	3 rd	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations
	4 th	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations

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13 th	1 st	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations
	2 nd	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations
	3 rd	Drive train
	4 th	Drive train
14 th	1 st	Solar powered vehicles
	2 nd	Solar powered vehicles
	3 rd	Discussion PYQ
	4 th	Discussion PYQ
15 th	1 st	Discussion PYQ
	2 nd	Doubt clearing class
	3 rd	Doubt clearing class
	4 th	Doubt clearing class

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