GOVERNMENT POLYTECHNIC JAJPUR
At/ Po: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019
Website: https://www.gpjajpur.org E-mail: principalgpjajpur@yahoo.co.in Contact: 9437155107

DEPARTMENT OF MECHANICAL

LESSON PLAN (2023-24)

Discipline: MECHANICAL	SEMESTER: 6TH	Name of the Teaching faculty: KEDARNATH JENA
SUBJECT: AE & HV	No of Days/Week class alloted: 4	Semester starts from Date: 16.01.2024 To 26.04.2024 No of weeks: 15
1st	1st	Syllabus, lession plan, Class test, Course outcomes and exam patterns.
	2nd	**CH - 1.0 INTRODUCTION & TRANSMISSION SYSTEM**
		Definition, need and classification of Automobiles
	3rd	Layout of automobile chassis with major components (Line diagram)
	4th	Clutch System: Need, Types (Single & Multiple)
2nd	1st	Working principle with sketch: different type of clutches.
	2nd	Working principle with sketch: different type of clutches.
	3rd	Purpose and Types of Gear box.
	4th	Construction and working of a 4 speed gear box.
3rd	1st	Concept of automatic gear changing mechanisms.
	2nd	Constructional features and working Propeller shaft.
	3rd	Need, Types and Working principle of Differential.
	4th	Working of differential of 4-wheeler.
4th	1st	Review class
	2nd	*Assignment Evaluation & Class Test*
	3rd	**CHAPTER 2.0 BRAKING SYSTEM**
		Braking systems in automobiles: Need and types
	4th	Mechanical Brakes
5th	1st	Hydraulic Brake
	2nd	Air Brake and Vacuum Brake
	3rd	Air assisted Hydraulic Brake
	4th	Review class
6th	1st	*Assignment Evaluation & Class Test*
	2nd	**CHAPTER 3.0 IGNITION & SUSPENSION SYSTEM**
		Schematic diagram, elements and working of Battery ignition system.
	3rd	Schematic diagram, elements and working of Magnet ignition system.
	4th	Spark plugs: Purpose, construction and specifications
7th	1st	Common ignition troubles and its remedies
	2nd	Conventional suspension system for Rear and Front axle
	3rd	Independent suspension system used in cars (coil spring and tension bars)
	4th	Constructional features and working of a telescopic shock absorber
8th	1st	Review class
	2nd	*Assignment Evaluation & Class Test*
	3rd	**CHAPTER 4.0 COOLING AND LUBRICATION:**
		Engine cooling: Need and classification

	4th	Cooling systems of IC engine
9th	1st	Defects of cooling and their remedial measures
	2nd	Engine lubrication: Need and classification
	3rd	Describe the Lubrication System of I.C. engine
	4th	Review class
10th	1st	*Assignment Evaluation & Class Test*
	2nd	**CHAPTER 5.0 FUEL SYSTEM**
		Fuels for Automobiles, Fuel Properties
	3rd	Air fuel ratio, Carburetor
	4th	Carburetion process for Petrol Engine
11th	1st	Multipoint fuel injection system for Petrol Engine
	2nd	Air fuel ratio of diesel engine. Filter for Diesel engine
	3rd	Elements of fuel injection system of Diesel engine
	4th	Working principle of fuel injection system for multi cylinder Engine
12th	1st	Principle of Fuel feed pump and Fuel Injector for Diesel engine
	2nd	Review class
	3rd	*Assignment Evaluation & Class Test*
	4th	**CHAPTER 6.0 ELECTRIC AND HYBRID VEHICLES**
		Introduction to Electric and Hybrid vehicles
13th	1st	Social and Environmental importance of Hybrid and Electric Vehicles
	2nd	Description of Electric Vehicles, operational advantages
	3rd	Present performance and applications of Electric Vehicles
	4th	Battery for Electric Vehicles, Battery types and fuel cells
14th	1st	Hybrid vehicles, Types of Hybrid and Electric Vehicles
	2nd	Parallel, Series, Parallel and Series configurations
	3rd	Drive train
	4th	Solar power generation and its application for automobiles
15th	1st	Solar powered vehicles
	2nd	Review class
	3rd	*Assignment Evaluation & Class Test*
	4th	*Discussion of previous year Question papers*

Signature of Faculty 13.01.24

E.LEARNING RESOURCES:

Sl. No.	*Name of Authors*	*Title of the Book*	*Name of the Publisher*
1	R B Gupta	Automobile Engineering	Satya Prakashan
2	Dr Kirpal Singh	Automobile Engineering Vol- I & II	Standard Publishers
3	C P Nakra	Automobile Engineering	Dhanpat Rai Publication
4	W H Course	Automotive Engine	McGraw Hill
5	Iqbal Hussain	Electric & Hybrid Vehicles – Design Fundamentals	CRC Press, 2
6	A K Babu	Statistical Electric & Hybrid Vehicles	Khanna Publishing House, New Delhi, 2018