

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING



LESSON PLAN

SUBJECT: AUTOMOBILE ENGINEERING AND HYBRID VEHICLES(TH-2)

FACULTY: ACHYUT KUMAR PATRA

ACCADEMIC SESSION: 2023-24

SEMESTER: 6TH

SEC: A


13/01/24
H O D (MECHANICAL ENGG.)

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Discipline: Mechanical Engineering	Semester: 6 TH	Section-A	Name of the teaching faculty: Achyut Kumar Patra
Subject: Automobile Engineering and Hybrid Vehicles (TH-2)	No. of Days/ per week class allotted: 04 periods per week (Tues-1 period, Wed-1 period, Thu-1 period, Fri-1 period)		Semester From Date: 16-01-2024 To Date: 26-04-2024 No. of weeks: 15 weeks
Week	Class Day	No of period available	Theory Topics
1 ST	16/01/2024	1	1.0 INTRODUCTION & TRANSMISSION SYSTEM: 1.1 Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram)
	17/01/2024	1	1.2 Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
	18/01/2024		1.2 Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
	19/01/2024		1.2 Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
2 ND	24/01/2024	1	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box
	25/01/2024	1	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box
3 RD	30/01/2024	1	1.4 Concept of automatic gear changing mechanisms
	31/01/2024	1	1.5 Propeller shaft: Constructional features
	01/02/2024	1	1.6 Differential: Need, Types and Working principle
	02/02/2024	1	1.6 Differential: Need, Types and Working principle

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4 TH	06/02/2024	1	2.0 BRAKING SYSTEM: 2.1 Braking systems in automobiles: Need and types
	07/02/2024	1	2.2 Mechanical Brake
	08/02/2024	1	2.3 Hydraulic Brake
	09/02/2024		2.4 Air Brake
5 TH	13/02/2024	1	2.5 Air assisted Hydraulic Brake
	15/02/2024	1	2.6 Vacuum Brake
	16/02/2024	1	Monthly Class Test-I
6 TH	20/02/2024	1	3.0 IGNITION & SUSPENSION SYSTEM: 3.1 Describe the Battery ignition and Magnet ignition system
	21/02/2024	1	3.2 Spark plugs: Purpose, construction and specifications
	22/02/2024	1	3.3 State the common ignition troubles and its remedies
	23/02/2024		3.4 Description of the conventional suspension system for Rear and Front axle
7 TH	27/02/2024	1	3.4 Description of the conventional suspension system for Rear and Front axle
	28/02/2024	1	3.5 Description of independent suspension system used in cars (coil spring and tension bars)
	29/02/2024		3.5 Description of independent suspension system used in cars (coil spring and tension bars)
	01/03/2024		3.6 Constructional features and working of a telescopic shock absorber
8 TH	06/03/2024	1	4.0 COOLING AND LUBRICATION: 4.1 Engine cooling: Need and classification
	07/03/2024	1	4.2 Describe defects of cooling and their remedial measures
9 TH	12/03/2024	1	4.3 Describe the Function of lubrication
	13/03/2024	1	4.4 Describe the lubrication System of I.C. engine
	14/03/2024	1	4.4 Describe the lubrication System of I.C. engine
	15/03/2024	1	5.0 FUEL SYSTEM: 5.1 Describe Air fuel ratio 5.2 Describe Carburetion process for Petrol Engine

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10 TH	19/03/2024	1	5.3 Describe Multipoint fuel injection system for Petrol Engine
	20/03/2024	1	5.4 Describe the working principle of fuel injection system for multi cylinder Engine
	21/03/2024	1	5.5 Filter for Diesel engine
	22/03/2024	1	5.6 Describe the working principle of Fuel feed pump and Fuel Injector for Diesel engine
11 TH	27/03/2024	1	6.0 ELECTRIC AND HYBRID VEHICLES: 6.1 Introduction, Social and Environmental importance of Hybrid and Electric Vehicles
	28/03/2024	1	6.2 Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles
12 TH	02/04/2024	1	6.3 Battery for Electric Vehicles, Battery types and fuel cells
	03/04/2024	1	6.3 Battery for Electric Vehicles, Battery types and fuel cells
	04/04/2024	1	6.4 Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations
	05/04/2024	1	6.4 Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations
13 TH	09/04/2024	1	6.4 Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations
	10/04/2024	1	6.5 Drive train
	12/04/2024	1	6.5 Drive train
14 TH	16/04/2024	1	6.6 Solar powered vehicles
	18/04/2024	1	6.6 Solar powered vehicles
	19/04/2024	1	Revision
15 TH	23/04/2024	1	Revision
	24/04/2024	1	Previous Year Questions Discussion
	25/04/2024	1	Previous Year Questions Discussion
	26/04/2024	1	Previous Year Questions Discussion

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15	27/04/2024	2	Revision and Final year question discussion
	29/04/2024	2	Revision and Final year question discussion.
	30/04/2024	2	Revision and Final year question discussion.
16 th	01/05/2024	2	Revision and Final year question discussion.

A. J. J. J.