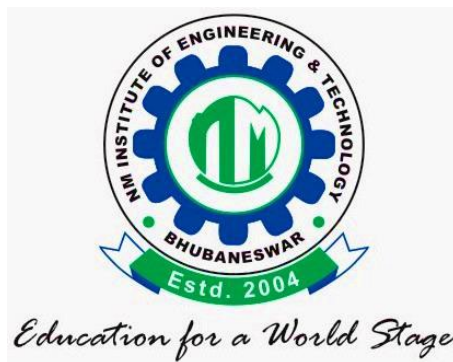


# **NM INSTITUTE OF ENGINEERING & TECHNOLOGY BHUBANESWAR**

## **Mechanical Engineering Department**



## **LESSON PLAN**

### **Session 2023-2024**

Semester: 6th

Subject : AUTOMOBILE ENGINEERING AND HYBRID VEHICLES

Faculty Name: Dr. RABINARAYAN BAG

Subject: AEHV No of Days/per week class allotted: 04

Semester from date : 02.01.2024 to date: 23.04.2024 No. of Weeks: 15

Week	Class Day	Theory topics
1	1	Automobiles: Definition
	2	need and classification
	3	Layout of automobile chassis with major components
	4	Clutch System:
2	1	Types (Single & Multiple)
	2	Working principle with sketch
	3	Purpose of gear box
	4	Construction and working of a 4 speed gear box
3	1	Concept of automatic gear changing mechanisms
	2	Propeller shaft: Constructional features
	3	Differential: Need and Types
	4	Working principle of Differential
4	1	Braking systems in automobiles: Need and types
	2	Mechanical Brake
	3	Hydraulic Brake
	4	Air Brake
5	1	Air assisted Hydraulic Brake
	2	Vacuum Brake
	3	Describe the Battery ignition and Magnet ignition system
	4	Spark plugs: Purpose, construction and specifications
6	1	State the common ignition troubles and its remedies
	2	Description of the conventional suspension system for Rear and Front axle
	3	Description of independent suspension system used in cars (coil spring and tension bars)
	4	Constructional features and working of a telescopic shock absorber
7	1	Introduction to Engine cooling:
	2	Need of Engine cooling
	3	classification
	4	Describe defects of cooling

Signature of Faculty

Subject: AEHV No of Days/per week class allotted: 04

Semester from date : 02.01.2024 to date: 23.04.2024 No. of Weeks: 15

Week	Class Day	Theory topics
8	1	their remedial measures
	2	Describe the Function of lubrication
	3	I.C. engine
	4	Types of IC engine
9	1	Lubrication types
	2	Uses of lubrication
	3	Describe the lubrication System of I.C. engine
	4	FUEL SYSTEM
10	1	Describe Air fuel ratio
	2	Introduction to carburetion process
	3	Describe Carburetion process for Petrol Engine
	4	Describe Multipoint fuel injection system for Petrol Engine
11	1	Describe the working principle of fuel injection system for multi cylinder Engine
	2	Filter for Diesel engine
	3	Describe the working principle of Fuel feed pump
	4	Describe the working principle of Fuel Injector for Diesel engine
12	1	Introduction, Social and Environmental importance of Hybrid vehicles
	2	importance of Electric Vehicles
	3	Description of Electric Vehicles,
	4	operational advantages,
13	1	present performance
	2	applications of Electric Vehicles
	3	Battery for Electric Vehicles,
	4	Battery types
14	1	fuel cells
	2	Hybrid vehicles
	3	Types of Hybrid
	4	Electric Vehicles
15	1	Parallel configuration
	2	Series configurations
	3	Drive train
	4	Solar powered vehicles

Signature of Faculty