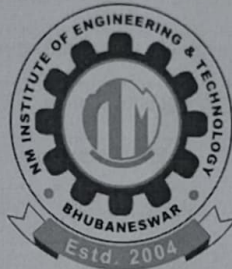


NM INSTITUTE OF ENGINEERING & TECHNOLOGY

BHUBANESWAR

Mechanical Engineering Department



Education for a World Stage

LESSON PLAN

Session 2022-2023

Semester: 6th

Subject : AUTOMOBILE ENGINEERING AND HYBRID VEHICLES

Faculty Name: GOPABANDHU SAHU

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

Semester from date : 15.09.22 to date: 21.01.23 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 |

G. Babanathu Sathy
Signature of Faculty

Subject: AEHV

No of Days/per week class allotted:

04

Semester from date :

15.09.22to date: 21.01.23

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 |

Gopalabandhu Sahu
Signature of Faculty