NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT: Th-2 (Automobile Engg And Hybrid Vehicles)

Name Of The Faculty :- Er. RANJIT GIRI
Branch :- Mechanical Engineering
Session :- 2024-25
Semester :- 6th
Examination :- 2024 (s)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Introduction and Transmission system	12	12
2	Braking system	05	05
3	Ignition and Suspension system	10	10
4	Cooling and Lubrication	07	07
5	Fuel system	10	10
6	Hybrid and Electric Vehicles	15	15
	TOTAL	60	60

Sign of Faculty 03/02/25

Sign of H.O.D. 3/02/25

Discipline: Mechanical ENGINEERING	Semester: 6TH	Name of the Teaching Faculty: Er. Ranjit Giri
		SESSION : 2024-25 EXAMINATION : 2024 (s)
Week	Class Day	Topics to be Covered
1st	1st	1.1 Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram).
	2nd	1.1 Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram).
	3rd	1.2 Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
	4th	1.2 Clutch System: Need, Types (Single & Multiple) and Working principle with sketch.
2nd	1st	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box.
	2nd	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box.
	3rd	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box.
	4th	1.4 Concept of automatic gear changing mechanisms.
3rd	1st	1.4 Concept of automatic gear changing mechanisms.
	2nd	1.5 Propeller shaft: Constructional features.
	3rd	1.6 Differential: Need, Types and Working principle.
	4th	1.6 Differential: Need, Types and Working principle.
4th	1st	2.1 Braking systems in automobiles: Need and types.
	2nd	2.2 Mechanical Brake.
	3rd	2.3 Hydraulic Brake.
	4th	2.4 Air Brake.
5th	1st	2.5 Air assisted Hydraulic Brake. 2.6 Vacuum Brake.
	2nd	3.1 Describe the Battery ignition and Magnet ignition system.
	3rd	3.1 Describe the Battery ignition and Magnet ignition system.
	4th	3.2 Spark plugs: Purpose, construction and specifications.

Week	Class Day	Topics to be Covered
6th	1st	3.2 Spark plugs: Purpose, construction and specifications.
	2nd	3.3 State the common ignition troubles and its remedies.
	3rd	3.4 Description of the conventional suspension system for Rear and Front axle
	4th	3.5 Description of independent suspension system used in cars (coil spring and tension.
7th	1st	3.5 Description of independent suspension system used in cars (coil spring and tension.
	2nd	3.6 Constructional features and working of a telescopic shock absorber.
	3rd	INTERNAL ASSESMENT
	4th	INTERNAL ASSESMENT
8th	1st	4.1 Engine cooling: Need and classification.
	2nd	4.2 Describe defects of cooling and their remedial measures.
	3rd	4.2 Describe defects of cooling and their remedial measures
	4th	4.3 Describe the Function of lubrication.
9th	1st	4.3 Describe the Function of lubrication.
	2nd	4.4 Describe the lubrication System of I.C. engine.
	3rd	4.4 Describe the lubrication System of I.C. engine.
	4th	5.1 Describe Air fuel ratio.
10th	1st	5.2 Describe Carburetion process for Petrol Engine.
	2nd	5.2 Describe Carburetion process for Petrol Engine.
	3rd	5.3 Describe Multipoint fuel injection system for Petrol Engine.
	4th	5.3 Describe Multipoint fuel injection system for Petrol Engine.

Week	Class Day	Topics to be Covered
11th	1st	5.4Describe the working principle of fuel injection system for multi cylinder Engine .
	2nd	5.4Describe the working principle of fuel injection system for multi cylinder Engine.
	3rd	5.5 Filter for Diesel engine.
	4th	5.6 Describe the working principle of Fuel feed pump and Fuel Injector for Diesel engine
12th	1st	5.6 Describe the working principle of Fuel feed pump and Fuel Injector for Diesel engine
	2nd	6.1 Introduction, Social and Environmental importance of Hybrid and Electric Vehicles.
	3rd	6.1 Introduction, Social and Environmental importance of Hybrid and Electric Vehicles.
	4th	6.1 Introduction, Social and Environmental importance of Hybrid and Electric Vehicles.
13th	1st	6.2 Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles.
	2nd	6.2 Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles.
	3rd	6.2 Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles.
	4th	6.3 Battery for Electric Vehicles, Battery types and fuel cells.
14th	1st	6.3 Battery for Electric Vehicles, Battery types and fuel cells.
	2nd	6.4 Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configuration.
	3rd	6.4 Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configuration.
	4th	6.4 Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configuration.
15th	1st	6.5 Drive train.
	2nd	6.6 Solar powered vehicles.
	3rd	6.6 Solar powered vehicles.
	4th	6.6 Solar powered vehicles

Sign of Faculty 03/02/25

Sign of H.O.D. 3/02/25