



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

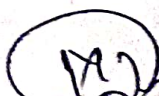
Semester :- 6th

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


03/02/25
Sign of Faculty


3/02/25
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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	
1 st	1 st	1.1 Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram).	
	2 nd	1.1 Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram).	
	3 rd	1.2 Clutch System: Need, Types (Single & Multiple) and Working principle with sketch	
	4 th	1.2 Clutch System: Need, Types (Single & Multiple) and Working principle with sketch.	
2 nd	1 st	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box.	
	2 nd	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box.	
	3 rd	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box.	
	4 th	1.4 Concept of automatic gear changing mechanisms.	
3 rd	1 st	1.4 Concept of automatic gear changing mechanisms.	
	2 nd	1.5 Propeller shaft: Constructional features.	
	3 rd	1.6 Differential: Need, Types and Working principle.	
	4 th	1.6 Differential: Need, Types and Working principle.	
4 th	1 st	2.1 Braking systems in automobiles: Need and types.	
	2 nd	2.2 Mechanical Brake.	
	3 rd	2.3 Hydraulic Brake.	
	4 th	2.4 Air Brake.	
5 th	1 st	2.5 Air assisted Hydraulic Brake. 2.6 Vacuum Brake.	
	2 nd	3.1 Describe the Battery ignition and Magnet ignition system.	
	3 rd	3.1 Describe the Battery ignition and Magnet ignition system.	
	4 th	3.2 Spark plugs: Purpose, construction and specifications.	

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

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


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