

# LESSON PLAN

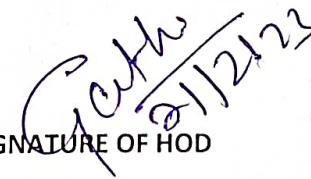
SESSION		SUMMER 2023				
SEMESTER		6TH				
BRANCH		MECHANICAL ENGINEERING				
SECTION		A&B				
THEORY NO.		2				
SUBJECT		AUTOMOBILE ENGINEERING AND HYBRID VEHICLES				
LECTURER		Er. KISHORE KUMAR DAS & SATYAJIT PANDA				
SL NO.	MONTH	CHAPTER NO.	DATE	TOPICS TO BE COVERED	NO. OF ACADEMIC DAYS AVAILABLE FOR THE SUBJECT	% COVERED
1	Feb-23	1	23.2.23	1.1 Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram)	5	9%
			24.2.23	1.1 Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram)		
			25.2.23	1.1 Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram)		
			27.2.23	1.2 Clutch System: Need, Types (Single & Multiple) and Working principle with sketch		
			28.2.23	1.2 Clutch System: Need, Types (Single & Multiple) and Working principle with sketch		
2	Mar-23	1	1.3.23	1.2 Clutch System: Need, Types (Single & Multiple) and Working principle with sketch	24	43%
			2.3.23	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box		
			3.3.23	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box		
			4.3.23	1.3 Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box		
			6.3.23	1.4 Concept of automatic gear changing mechanisms		
			9.3.23	1.5 Propeller shaft: Constructional features		
			10.3.23	1.6 Differential: Need, Types and Working principle		
		11.3.23	1.6 Differential: Need, Types and Working principle			
		2	13.3.23	2.1 Braking systems in automobiles: Need and types		
			14.3.23	2.2 Mechanical Brake		
15.3.23	2.3 Hydraulic Brake					

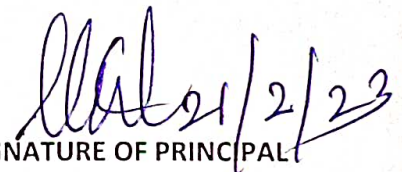
2	Mar-23	2	16.3.23	2.3 Hydraulic Brake	24	43%
			17.3.23	2.4 Air Brake		
			18.3.23	2.5 Air assisted Hydraulic Brake		
			20.3.23	2.6 Vacuum Brake		
		3	21.3.23	3.1 Describe the Battery ignition and Magnet ignition system		
			22.3.23	3.1 Describe the Battery ignition and Magnet ignition system		
			23.3.23	3.2 Spark plugs: Purpose, construction and specifications		
			24.3.23	3.3 State the common ignition troubles and its remedies		
			25.3.23	3.4 Description of the conventional suspension system for Rear and Front axle		
			27.3.23	3.4 Description of the conventional suspension system for Rear and Front axle		
			28.3.23	3.5 Description of independent suspension system used in cars (coil spring and tension bars)		
29.3.23	3.5 Description of independent suspension system used in cars (coil spring and tension bars)					
31.3.23	3.6 Constructional features and working of a telescopic shock absorber					
3	Apr-23	3	3.4.23	3.6 Constructional features and working of a telescopic shock absorber	15	27%
			4	4.4.23		
		5.4.23		4.2 Describe defects of cooling and their remedial measures		
		6.4.23		4.3 Describe the Function of lubrication		
		8.4.23		4.4 Describe the lubrication System of I.C. engine		
		10.4.23		4.4 Describe the lubrication System of I.C. engine		
		5	11.4.23	5.1 Describe Air fuel ratio		
			12.4.23	5.2 Describe Carburetion process for Petrol Engine		
			13.4.23	5.3 Describe Multipoint fuel injection system for Petrol Engine		
			24.4.23	5.3 Describe Multipoint fuel injection system for Petrol Engine		
			25.4.23	5.4 Describe the working principle of fuel injection system for multi cylinder Engine		
			26.4.23	5.4 Describe the working principle of fuel injection system for multi cylinder Engine		
			27.4.23	5.5 Filter for Diesel engine		
			28.4.23	5.6 Describe the working principle of Fuel feed pump and Fuel Injector for Diesel engine		
		29.4.23	5.6 Describe the working principle of Fuel feed pump and Fuel Injector for Diesel engine			

4	May-23	6	1.5.23	6.1 Introduction, Social and Environmental importance of Hybrid and Electric Vehicles	11	21%
			2.5.23	6.1 Introduction, Social and Environmental importance of Hybrid and Electric Vehicles		
			3.5.23	6.2 Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles		
			4.5.23	6.2 Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles		
			6.5.23	6.3 Battery for Electric Vehicles, Battery types and fuel cells		
			8.5.23	6.3 Battery for Electric Vehicles, Battery types and fuel cells		
			9.5.23	6.4 Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations		
			10.5.23	6.4 Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations		
			11.5.23	6.5 Drive train		
			12.5.23	6.6 Solar powered vehicles		
			13.5.23	REVISION		

BRIEF SUMMARY OF THE PLAN			
SL. NO.	MONTH	UNIT/CHAPTER TO BE COVERED	% COVERAGE
1	Feb-23	CH-1	9%
2	Mar-23	CH-1, CH-2 & CH-3	43%
3	Apr-23	ch-3, CH-4 & CH-5	27%
4	May-23	CH-6	21%

  
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