

Dicipline:	Mechanical	Semester: 6 <sup>th</sup> Sem.	Name of the Teaching Faculty	Tapas Kumar Panda
Subject: Automobile Engineering & Hybrid Vehicle	No of Days/Week Class Allotted: 04	Semester From date: 15/04/21 To date: 03/08/21	No. of Weeks: 15	
WEEK	Class Day	Theory Topics		
01	1st Dt: 15/04/21	What is Automobile? Introduction about this & need of study.		
	2nd Dt: 16/04/21	<u>Unit-1</u> : Introduction & Transmission System. 1.1. Automobile: Definition, need & classification		
	3rd Dt: 19/04/21	1.1. Layout of Automobile chassis with major Components (Line diagram)		
	4th Dt: 20/04/21	1.2. Clutch System: Need, Types (Single & Multiple)		
	5th			
02	1st Dt: 22/04/21	1.2. Working Principle of Clutch both type Single & Multiple with diagram		
	2nd Dt: 23/04/21	1.3. Gear Box: purpose of gear box, Construction of a 4 Speed gear box.		
	3rd Dt: 26/04/21	1.3. Gear Box. Working of a 4 speed gearbox with neat sketch.		
	4th Dt: 27/04/21	1.4. Propeller shaft: Constructional features		
	5th			
03	1st Dt: 29/04/21	1.6. Differential: Introduction & Need of differential		
	2nd Dt: 30/04/21	1.6. Differential: Types and Working Principle with diagram.		
	3rd Dt: 03/05/21	<u>Unit-2</u> : <u>Braking System</u> : Introduction, Braking System in automobile Need & types.		
	4th Dt: 04/05/21	2.2. Mechanical Brake with Sketch 2.3. Hydraulic Brake with Sketch		
	5th			

WEEK	Class Day	Theory Topics
04	1st Dt: 06/05/21	2.3. Hydraulic Brake with Sketch 2.4. Air Brake with Sketch
	2nd Dt: 07/05/21	2.4. Air Brake with Sketch 2.5. Air assisted Hydraulic Brake with Sketch
	3rd Dt: 10/05/21	2.5. Air assisted Hydraulic Brake 2.6. Vacuum Brake with Sketch
	4th Dt: 11/05/21	<u>Class test - I</u>
	5th	
05	1st Dt: 13/05/21	Discussion with students & doubt clearing class.
	2nd Dt: 17/05/21	<u>Unit - 3</u> :- Ignition & Suspension System Introduction
	3rd Dt: 18/05/21	3.1. Describe the Battery Ignition and Magnet Ignition System.
	4th Dt: 20/05/21	3.2. Spark plug: Purpose, construction of Spark plug.
	5th	
06	1st Dt: 21/05/21	3.2. Working Principle & Specification of Spark plug.
	2nd Dt: 24/05/21	3.3. State the common ignition troubles and its remedies
	3rd Dt: 27/05/21	3.4. Description of the conventional Suspension System for Rear and front axle.
	4th Dt: 28/05/21	3.5. Description of independent Suspension System used in cars (coil, spring and tension bars)
	5th	



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07	1st Dt: 31/05/21	3.6. Constructional features and working of a telescopic shock absorber		
	2nd Dt: 01/06/21	<u>Unit-4</u> : Cooling and lubrication Introduction about this		
	3rd Dt: 03/06/21	4.1. Engine Cooling: Need and classification		
	4th Dt: 04/06/21	4.2. Describe defects of cooling and their remedial measures. with sketch		
	5th			
08	1st Dt: 07/06/21	4.3. Describe the function of lubrication with neat sketch		
	2nd Dt: 08/06/21	4.4. Describe the lubrication system of I.C. Engine with neat sketch.		
	3rd Dt: 11/06/21	<u>Class test - II</u>		
	4th Dt: 14/06/21	Discussion with students & doubt clearing class.		
	5th			
09	1st Dt: 17/06/21	<u>Unit-5</u> : <u>Fuel system</u> : Introduction & need of fuel system.		
	2nd Dt: 18/06/21	5.1. Describe air fuel ratio		
	3rd Dt: 21/06/21	5.2. Describe carburetion process for petrol engine		
	4th Dt: 22/06/21	5.3. Describe Multipoint fuel injection system for petrol engine.		
	5th			

## Theory Topics

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WEEK	Class Day	Theory Topics
(10)	1st Dt: 24/06/21	S.4. Describe the working principle of fuel injection system for multi cylinder engine.
	2nd Dt: 25/06/21	S.4. Continuing about fuel injection system for multi cylinder engine.
	3rd Dt: 28/06/21	S.5. filter for Diesel Engine, Introduction about filter & types of filter.
	4th Dt: 29/06/21	S.5. What is filter & how the filter work in a Diesel Engine with neat sketch.
	5th	
(11)	1st Dt: 01/07/21	S.6. Describe the working principle of fuel feed pump for diesel engine.
	2nd Dt: 02/07/21	S.6. Continuing about the fuel feed pump for diesel engine.
	3rd Dt: 05/07/21	S.6. Describe the working principle of fuel injector for Diesel engine.
	4th Dt: 06/07/21	S.6. Continuing regarding fuel injection for Diesel engine.
	5th	
(12)	1st Dt: 08/07/21	<u>Unit-6 :- Electric &amp; Hybrid Vehicles :-</u> 6.1. Introduction about this
	2nd Dt: 09/07/21	6.1. Why need this type vehicle & Social and Environmental importance of Hybrid & Electric Vehicle.
	3rd Dt: 13/07/21	6.2. Description of Electric Vehicle
	4th Dt: 15/07/21	6.2. Operational advantages for Environment & Social
	5th	



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WEEK	Class Day	Theory Topics
(13)	1st Dt: 16/07/21	6.2. present performance and applications of Electric Vehicle.
	2nd Dt: 19/07/21	6.3. Battery for Electric Vehicles
	3rd Dt: 20/07/21	6.3. Battery types & fuel Cells.
	4th Dt: 22/07/21	6.4. Hybrid Vehicles: Types of Hybrid Vehicle
	5th	
(14)	1st Dt: 23/07/21	6.4. Continuing Types of Electric Vehicle
	2nd Dt: 26/07/21	6.4. Parallel, Series, Parallel & Series Configurations
	3rd Dt: 27/07/21	6.5. Drive train: - what is drive train & its working principles.
	4th Dt: 29/07/21	6.6. Solar powered vehicle, Introduction & Construction.
	5th	
(15)	1st Dt: 30/07/21	6.6. Solar powered vehicle working & advantages.
	2nd Dt: 02/08/21	previous year Question discussion with Students.
	3rd (1st) Dt: 03/08/21	Doubt clearing class & Important Question given to Students.
	4th (2nd) Dt: 03/08/21	Important Question discussion & previous year Question discussion.
	5th	