

C. V. RAMAN POLYTECHNIC, BHUBANESWAR

LESSON PLAN Session (2025-2026)

Discipline: Mechanical Engineering	Semester: 6 th Semester, Summer/2026	Name of the Faculty: Dr. Brundaban Sahoo, Asst.Prof Email ID: brundaban.sahoo@cvrp.edu.in
Subject: Automobile Engineering and Hybrid Vehicles (Th2), Theory-2	No. of Days/week: 04	Start Date: 22/12/2025 End Date: 18/04/2026

Week	Class Day	Theory Topics
1st	1st	Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram)
	2nd	Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram)
	3rd	Clutch System: Need, Types
	4th	Working principle of single plate clutch with sketch
2nd	1st	Working principle of multi plate clutch with sketch
	2nd	Gear Box: Purpose of gear box
	3rd	Construction and working of a 4 speed gear box(Sliding mesh)
	4th	Construction and working of a 4 speed gear box(Constant mesh)
3rd	1st	Construction and working of a 4 speed gear box(Synchro mesh)
	2nd	Concept of automatic gear changing mechanisms
	3rd	Concept of automatic gear changing mechanisms(Epyclic gear train)
	4th	Concept of automatic gear changing mechanisms (Freewheeling mechanism)
4th	1st	Concept of automatic gear changing mechanisms (Fluid drive)
	2nd	Concept of automatic gear changing mechanisms (Torque converter)
	3rd	Semi-automatic and automatic transmission
	4th	Propeller shaft: Constructional features
5th	1st	Differential: Need, Types and Working principle
	2nd	Differential: Need, Types and Working principle
	3rd	Braking systems in automobiles: Need and types
	4th	Working of Mechanical Brake

6th	1st	Working of Hydraulic Brake
	2nd	Working of Air Brake
	3rd	Working of Air assisted Hydraulic Brake
	4th	working of Vacuum Brake
7th	1st	Describe the Battery ignition system
	2nd	Describe the Magnet ignition system
	3rd	Spark plugs: Purpose, construction and specifications
	4th	Spark plugs: Purpose, construction and specifications
8th	1st	State the common ignition troubles and its remedies
	2nd	Description of the conventional suspension system for Rear and Front axle
	3rd	Description of the conventional suspension system for Rear and Front axle
	4th	Description of independent suspension system used in cars (coil spring and tension bars)
9th	1st	Description of independent suspension system used in cars (coil spring and tension bars)
	2nd	Constructional features and working of a telescopic shock absorber
	3rd	Engine cooling: Need and classification
	4th	Engine cooling: Need and classification
10th	1st	Engine cooling: Air cooling
	2nd	Engine cooling: water cooling
	3rd	Describe defects of cooling and their remedial measures
	4th	Describe the Function of lubrication
11th	1st	Describe the lubrication System of I.C. engine
	2nd	Methods of lubrication
	3rd	Methods of lubrication
	4th	Describe Air fuel ratio
12th	1st	Describe Carburetion process for Petrol Engine
	2nd	Describe Multipoint fuel injection system for Petrol Engine
	3rd	Describe the working principle of fuel injection system for multi cylinder Engine
	4th	Filter for Diesel engine
13th	1st	Describe the working principle of Fuel feed pump
	2nd	Describe the working principle of Fuel Injector for Diesel engine
	3rd	Introduction, Social and Environmental importance of Hybrid and Electric Vehicles
	4th	Introduction, Social and Environmental importance of Hybrid and Electric Vehicles
14th	1st	Description of Electric Vehicles, operational advantages.
	2nd	Present performance and applications of Electric Vehicles
	3rd	Battery for Electric Vehicles, Battery types and fuel cells
	4th	Battery for Electric Vehicles, Battery types and fuel cells
15th	1st	Hybrid vehicles, Types of Hybrid and Electric Vehicles
	2nd	Parallel, Series, Parallel and Series configurations
	3rd	Drive train
	4th	Solar powered vehicles

Signature of Faculty
21/12/23

Signature of HOD