

H.O.D Mech
A.P.R.

Govt. Polytechnic Pragati nagar (H.P.)

Lesson Planning (Theory)

Branch : Mechanical Engineering

Semester: 5th

Subject : Vehicular Systems

Session: Aug – Dec 2026

Teacher: Er. ANIL SEN

Sr. No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1	10	Unit –1: Introduction	- Types of automobiles, different layouts of vehicle, chassis, frame and body - Spark Ignition (SI) & Compression Ignition (CI) engines.	R1& R2	
2	14	Unit– 2 Automotive Engine Parts	- Automotive Engine Parts Cylinder – arrangements and their relative merits, Liners, Piston, connecting rod, crankshaft, valves - valve actuating mechanisms.	R1& R2	
3	10	Unit– 3 Transmission Systems	- Transmission Systems Clutch-types and construction of single plate clutch, propeller shaft, slip joints - universal joints, Differential, and rear axle.	R1& R2	
4	12	Unit– 4 Brakes and Suspension Systems	- Brakes and Suspension Systems. Requirements, leaf spring, coil spring. - Types of brakes, mechanical and hydraulic braking systems, brake shoe arrangements, Disk brakes, drum brakes, Antilock – Braking systems - purpose and operation of antilock-braking system.	R1& R2	
5	10	Unit– 5 Safety and Comfort Systems	- Safety and Comfort Systems Passive Safety Systems – Airbags, Seatbelts, Crumple Zones, Active Safety Systems – - Automatic Driver Assist Systems (ADAS), Antilock Braking System, Reverse parking system, Anti-collision system, Traction control system, Comfort Systems – Cruise control system, Heating, ventilation and Air-conditioning system (HVAC), - Autonomous Driving Cars – Level of Driving Automation.(Basic definitions and functions only)	R1& R2	

REFERENCE RESOURCES

R1 Automobile Engineering-R. P. Gupta, Satya Prakashan.

R2 Automobile Engineering-Kirpal Singh. Vol I and II.

Anil
Signature of Teacher with Date
01-08-2026

Anil
Signature of H.O.D.
01-08-2026

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