

GOVT.POLYTECHNIC, GAJAPATI, PARALAKHEMUNDI

Academic Lesson Plan for Summer Semester- 2025-26

Name of the Teaching Faculty: Er.Aswin Pradhan
Semester: 6th

No. of Periods per Week: 04

End Semester Exam: 80

Total Marks: 100

Semester from Date: 22/12/2025

No. of weeks: 15

Department: Mechanical Engineering
Subject: AUTOMOBILE ENGINEERING AND
HYBRID VEHICLES

Total Periods: 60

Class Test: 20

Theory - 2

To Date: 18/04/2026

W.e.f: 22/12/2025 (15 Weeks)

Sl. No.	Week	Period	Topic to be covered
1.	1 st	1 st	Introduction to Automobiles: Definition, need and classification
2.		2 nd	Layout of automobile chassis with major components (Line diagram)
3.		3 rd	Clutch System: Need, Types (Single) and Working principle with sketch
4.		4 th	Clutch System: Need, Types (Multiple) and Working principle with sketch
5.	2 nd	1 st	Gear Box: Purpose of gear box,
6.		2 nd	Construction and working of a 4-Speed gear box
7.		3 rd	Concept of automatic gear changing mechanisms
8.		4 th	Propeller shaft: Constructional features
9.	3 rd	1 st	Differential: Need, Types and Working principle
10.		2 nd	Doubt Clearance class with previous year Questions and answer discussion
11.		3 rd	Braking systems in automobiles: Need and types
12.		4 th	Mechanical Brake
13.	4 th	1 st	Hydraulic Brake
14.		2 nd	Air Brake
15.		3 rd	Air assisted Hydraulic Brake
16.		4 th	Vacuum Brake
17.	5 th	1 st	Doubt Clearance class with previous year Questions and answer discussion
18.		2 nd	Describe the Battery ignition
19.		3 rd	Describe the Magnet ignition system
20.		4 th	Spark plugs: Purpose, construction and specifications
21.	6 th	1 st	State the common ignition troubles and its remedies
22.		2 nd	Description of the conventional suspension system for Rear axle
23.		3 rd	Description of the conventional suspension system for Front axle
24.		4 th	Description of independent suspension system used in cars (coil spring)
25.	7 th	1 st	Description of independent suspension system used in cars (tension bars)
26.		2 nd	Constructional features and working of a telescopic shock absorber
27.		3 rd	Doubt Clearance class with previous year Questions and answer discussion
28.		4 th	Engine cooling: Need and classification
29.	8 th	1 st	Do
30.		2 nd	Describe defects of cooling and their remedial measures
31.		3 rd	Do
32.		4 th	Describe the Function of lubrication

33.	9 th	1 st	Do
34.		2 nd	Describe the lubrication System of I.C. engine
35.		3 rd	Doubt Clearance class with previous year Questions and answer discussion
36.		4 th	Introduction to Fuel System
37.	10 th	1 st	Describe Air fuel ratio
38.		2 nd	Describe Carburetion process for Petrol Engine
39.		3 rd	Describe Multipoint fuel injection system for Petrol Engine
40.		4 th	Do
41.	11 th	1 st	Describe the working principle of fuel injection system for multi cylinder Engine
42.		2 nd	Filter for Diesel engine
43.		3 rd	Describe the working principle of Fuel feed pump for Diesel engine
44.		4 th	Describe the working principle of Fuel Injector for Diesel engine
45.	12 th	1 st	Doubt Clearance class with previous year Questions and answer discussion
46.		2 nd	Introduction, Social and Environmental importance of Hybrid Vehicles
47.		3 rd	Introduction, Social and Environmental importance of Electric Vehicles
48.		4 th	Description of Electric Vehicles
49.	13 th	1 st	Operational advantages of EVs
50.		2 nd	present performance and applications of Electric Vehicles
51.		3 rd	Battery for Electric Vehicles
52.		4 th	Electric Vehicles Battery types and fuel cells
53.	14 th	1 st	Hybrid vehicles
54.		2 nd	Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations
55.		3 rd	Do
56.		4 th	Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations
57.	15 th	1 st	Do
58.		2 nd	Drive train
59.		3 rd	Solar powered vehicles
60.		4 th	Doubt Clearance class with previous year Questions and answer discussion

The above lesson plan prepared by the concerned faculty.

Er. Aswin Pradhan
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