

GOVT. POLYTECHNIC, NAYAGARH

LESSON PLAN

6th SEMESTER MECHANICAL ENGINEERING (2022-23)

(w.e.f 14/02/2023)

SUBJECT-AUTOMOBILE ENGINEERING AND HYBRID VEHICLES(TH.2)

BRANCH- MECHANICAL ENGINEERING.

NAME- RAMYA RASHMI ROUT, Lecturer (PTGF)

TOTAL PERIODS-60

THEORY-4P/WEEK

Week	Class Day	Theory / Practical Topics
1 st	1 st	Automobiles: Definition, need and classification.
	2 nd	Layout of automobile chassis with major components (Line diagram).
	3 rd	Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
	4 th	Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
2 nd	1 st	Gear Box: Purpose of gear box, Construction and working of a 4 speed gear Box.
	2 nd	Gear Box: Purpose of gear box, Construction and working of a 4 speed gear Box.
	3 rd	Concept of automatic gear changing mechanisms
	4 th	Concept of automatic gear changing mechanisms
3 rd	1 st	Propeller shaft: Constructional features
	2 nd	Propeller shaft: Constructional features
	3 rd	Differential: Need, Types and Working principle
	4 th	Differential: Need, Types and Working principle
4 th	1 st	Braking systems in automobiles: Need and types.
	2 nd	Mechanical Brake, Hydraulic brake
	3 rd	Air brake
	4 th	Air assisted hydraulic brake
5 th	1 st	Vacuum Brake
	2 nd	Describe the Battery ignition and Magnet ignition system
	3 rd	Spark plugs: Purpose, construction and specifications
	4 th	State the common ignition troubles and its remedies
6 th	1 st	Description of the conventional suspension system for Rear and Front axle
	2 nd	Description of the conventional suspension system for Rear and Front axle
	3 rd	Description of independent suspension system used in cars (coil spring and tension bars)
	4 th	Description of independent suspension system used in cars (coil spring and tension bars)
7 th	1 st	Constructional features and working of a telescopic shock absorber
	2 nd	Constructional features and working of a telescopic shock absorber
	3 rd	Engine cooling: Need and classification
	4 th	Engine cooling: Need and classification
8 th	1 st	Describe defects of cooling and their remedial measures
	2 nd	Describe defects of cooling and their remedial measures
	3 rd	Describe the Function of lubrication
	4 th	Describe the Function of lubrication
9 th	1 st	Describe the lubrication System of I.C. engine
	2 nd	Describe the lubrication System of I.C. engine
	3 rd	Describe Air fuel ratio
	4 th	Describe Carburetion process for Petrol Engine

10 th	1 st	Describe Carburetion process for Petrol Engine
	2 nd	Describe Multipoint fuel injection system for Petrol Engine
	3 rd	Describe Multipoint fuel injection system for Petrol Engine
	4 th	Describe Multipoint fuel injection system for Petrol Engine
11 th	1 st	Describe the working principle of fuel injection system for multi cylinder Engine
	2 nd	Describe the working principle of fuel injection system for multi cylinder Engine
	3 rd	Filter for Diesel engine
	4 th	Describe the working principle of Fuel feed pump
12 th	1 st	Describe the working principle of Fuel Injector for Diesel engine
	2 nd	What is electric and hybrid vehicles(Introduction)
	3 rd	Social and Environmental importance of Hybrid and Electric Vehicles
	4 th	Description of Electric Vehicles, operational
13 th	1 st	Advantages and disadvantages of Electric Vehicles
	2 nd	present performance and applications of Electric Vehicles
	3 rd	present performance and applications of Electric Vehicles
	4 th	Battery for Electric Vehicles, Battery types and fuel cells
14 th	1 st	Battery for Electric Vehicles, Battery types and fuel cells
	2 nd	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations;
	3 rd	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations;
	4 th	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations;
15 th	1 st	Drive train
	2 nd	Drive train
	3 rd	Solar powered vehicles
	4 th	Solar powered vehicles

Ramya Lashmi Patel
 PTGIF (Mech. Engg.)
 Dt. 13/02/2023