

# LESSON PLAN

## DEPARTMENT OF MECHANICAL ENGINEERING, ITT, CHOUDWAR

**SUBJECT: AUTOMOBILE ENGINEERING & HYBRID VEHICLE** Periods: 4 per week SEM: 6th

**NAME OF FACULTY: GURU PRASAD SAHOO, LECTURER (MECH)**

**No. of weeks: 15**

Week	Class Day	Theory / Practical Topics
1st	1 <sup>st</sup>	Automobiles: Definition, need and classification
	2 <sup>nd</sup>	Automobiles: Definition, need and classification
	3 <sup>rd</sup>	Layout of automobile chassis with major components (Line diagram)
	4 <sup>th</sup>	Layout of automobile chassis with major components (Line diagram)
2 <sup>nd</sup>	1 <sup>st</sup>	Manufacturer's specification of auto engines of motorcycle, scooter, car & bus one from each.
	2 <sup>nd</sup>	State the classification of engines basing on working principle, fuel used, position of cylinder,
	3 <sup>rd</sup>	arrangement of cylinder.
	4 <sup>th</sup>	Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
3 <sup>rd</sup>	1 <sup>st</sup>	Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
	2 <sup>nd</sup>	Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box, Concept of automatic gear changing mechanisms
	3 <sup>rd</sup>	Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box, Concept of automatic gear changing mechanisms
	4 <sup>th</sup>	Propeller shaft: Constructional features
4 <sup>th</sup>	1 <sup>st</sup>	Differential: Need, Types and Working principle
	2 <sup>nd</sup>	Braking systems in automobiles: Need and types.
	3 <sup>rd</sup>	Braking systems in automobiles: Need and types.
	4 <sup>th</sup>	Mechanical Brake
5 <sup>th</sup>	1 <sup>st</sup>	Mechanical Brake
	2 <sup>nd</sup>	Hydraulic brake
	3 <sup>rd</sup>	Air brake
	4 <sup>th</sup>	Air brake
6 <sup>th</sup>	1 <sup>st</sup>	Air assisted hydraulic brake
	2 <sup>nd</sup>	Air assisted hydraulic brake
	3 <sup>rd</sup>	Vacuum Brake
	4 <sup>th</sup>	Vacuum Brake
7 <sup>th</sup>	1 <sup>st</sup>	Revision
	2 <sup>nd</sup>	Wiring diagram of Horn circuit, Lighting circuit, Cut-out circuit,
	3 <sup>rd</sup>	Voltage current regulator circuit and Flasher circuit (Sketch and description)
	4 <sup>th</sup>	State the common ignition troubles and its remedies.
8 <sup>th</sup>	1 <sup>st</sup>	Spark plugs: Purpose, construction and specifications
	2 <sup>nd</sup>	Description of the conventional suspension system for Rear and Front axle.
	3 <sup>rd</sup>	Description of the conventional suspension system for Rear and Front axle.
	4 <sup>th</sup>	Description of independent suspension system used in cars (coil spring and tension bars)
9 <sup>th</sup>	1 <sup>st</sup>	Description of independent suspension system used in cars (coil spring and tension bars)
	2 <sup>nd</sup>	Constructional features and working of a telescopic shock absorber
	3 <sup>rd</sup>	Constructional features and working of a telescopic shock absorber

	4 <sup>th</sup>	State tyre specifications.
10 <sup>th</sup>	1 <sup>st</sup>	Explain the causes and remedies of tyre wear.
	2 <sup>nd</sup>	Describe necessity of engine cooling.
	3 <sup>rd</sup>	Describe defects of cooling and their remedial measures.
	4 <sup>th</sup>	Describe defects of cooling and their remedial measures.
11 <sup>th</sup>	1 <sup>st</sup>	Describe the Function of lubrication.
	2 <sup>nd</sup>	Describe the Function of lubrication.
	3 <sup>rd</sup>	Describe the lubrication System of I.C. engine.
	4 <sup>th</sup>	Describe the lubrication System of I.C. engine.
12 <sup>th</sup>	1 <sup>st</sup>	<b>Fuel and Ignition system:</b> For petrol Engine:
	2 <sup>nd</sup>	Revision
	3 <sup>rd</sup>	Describe carburetion and Air fuel ratio.
	4 <sup>th</sup>	Describe carburetion and Air fuel ratio.
13 <sup>th</sup>	1 <sup>st</sup>	Describe the Battery ignition and Magnet ignition system.
	2 <sup>nd</sup>	Describe the Battery ignition and Magnet ignition system.
	3 <sup>rd</sup>	Revision
	4 <sup>th</sup>	Describe Multipoint fuel injection system
14 <sup>th</sup>	1 <sup>st</sup>	Describe Multipoint fuel injection system For Diesel engine:
	2 <sup>nd</sup>	Describe Multipoint fuel injection system For Diesel engine:
	3 <sup>rd</sup>	Describe the working principle of Fuel feed pump
	4 <sup>th</sup>	Describe the working principle of Fuel feed pump
15 <sup>th</sup>	1 <sup>st</sup>	Injector and Fuel filter
	2 <sup>nd</sup>	Describe the working principle of fuel injection system for multi cylinder engine.
	3 <sup>rd</sup>	Describe the working principle of fuel injection system for multi cylinder engine.
	4 <sup>th</sup>	Revision



Sign. of Faculty