

GOVT. POLYTECHNIC BOLANGIR

LESSON PLAN

Discipline : AUTOMOBILE	Semester: 4TH	Name of the Teaching Faculty : KUMAR GYANDEEP
Subject : AUTOMOTIVE ENGINE	No. of Days / per week class allotted :	Semester From date : 10.03.2022 To Date : 10.06.2022 No. of Weeks : 13
Week	Class Day	Topics
2ND MAR	1st	Petrol engine and its constructional details
	2nd	Working principle of two stroke & four stroke petrol engine.
	3rd	Constructional details of petrol engine with materials. Engine components like piston, cylinder block, valve,
	4th	Constructional details of petrol engine with materials. Engine components like connecting rod, crank shaft, crank slot
3RD MAR	1st	Cylinder arrangement: inline and v-type engine firing order of multi cylinder engine
	2nd	Side valve actuating mechanism, over head valve actuating mechanism
	3rd	I, F & T type valve arrangement, valve clearance
	4th	Timing gear, vibration damper, inlet & exhaust manifold
4TH MAR	1st	Diesel engine and its constructional details
	2nd	Working principle two strokes & four stroke diesel engine
	3rd	Types, advantages & limitations of diesel engine over petrol engine
	4th	Function & types of combustion chamber
1ST APRIL	1st	Direct injection type combustion chamber
	2nd	pre combustion chamber
	3rd	turbulence chamber
	4th	Their advantages & disadvantages
2ND APRIL	1st	Performance of I.C engine
	2nd	Define mechanical efficiency,
	3rd	Indicated thermal efficiency
	4th	Relative Efficiency,

3RD APRIL	1st	brake thermal efficiency
	2nd	overall efficiency
	3rd	Define air-fuel ratio & calorific value of fuel.
	4th	Morse – test and preparation of heat balance sheet
4TH APRIL	1st	Work out problems to determine efficiencies & specific fuel consumption
	2nd	Fuel feed system for petrol & diesels engine
	3rd	Line diagram of petrol engine fuel supply system
	4th	Components of petrol engine fuel supply system like fuel tanks, fuel lines
1ST MAY	1st	Components of petrol engine fuel supply system like fuel tanks, fuel lines, fuel pump (mechanical & electrical) fuel filter
	2nd	Requirements and working principle of carburetors.
	3rd	Air fuel ratios for different conditions in carburettors
	4th	
2ND MAY	1st	Internal Assement
	2nd	Circuits of various types of carburetor, like down draught carburetor ,side draught carburetor
	3rd	Description of motorcycle carburetor
	4th	line diagram of diesel engine fuel supply system
3RD MAY	1st	Requirements and types of fuel injection system
	2nd	Air injection, solid injection individual pump system injection , common railsystem injection
	3rd	TBL system MPFI system PFI system ECM control functions
	4th	Constructional details of fuel pump
4TH MAY	1st	Fuel injectors
	2nd	Governing system of fuel: Mechanical governor pneumatics governor. Hydraulic governor
	3rd	Cooling System , Necessity & types of engine cooling
	4th	Constructional details of air cooling & water cooling (thermo siphon & pump air circulation)

1ST JUNE	1st	Advantages and limitations of air cooling.
	2nd	Water pump thermostat, radiator, Anti-freezing and anti-corrosive additives
	3rd	Lubrication System - Types, requirements and properties (flash point & fire points) of lubricants
	4th	Types of lubrication system gravity type, Splash type, pressure type, dry sump type, semi pressure type etc.

2ND JUNE	1st	Parts of lubricating system like oil sump, oil cooler,
	2nd	oil filter, oil pressure gauge, oil pressure indicating light ,oil label indicator
	3rd	Oil filters and its types – full flow filter and bypass filter. Crank case ventilation
	4th	Revisson