PLANNED SYLLABUS COVERAGE

"PVCNSSK" G.P Bilaspur	Department: Mechanical Engg. Subject –Automobile Engineering(4th) (MEPE202-3)				
	Course - Diploma	Duration – 3 Years			
SYLLABUS COVERAGE	Total Periods -42	Theory –42 hours			

Sr No	Period Nos	Topic	Details	Instruction Reference	Additional Study Recommende	Remarks
1	1-6	UNIT-I: **Introduction to basic structure of an automobile.**	Basic engine components; Cylinder block; Cylinder head; Gaskets; cylinder liners, types of cylinder liners; Piston and piston pin; piston rings, types of piston rings; Connecting rod; Crank shaft; Cam shaft; Crankcase; Engine valves; Fly- wheel and Governor.	Automobile Engineering VolI,II, Kirpal Singh.		
2.	7-16	**Unit-II: Cooling and lubrication system.**	The necessity of cooling system; Types of cooling sys- tem-air cooling and water cooling; Air cooling system; Types of water cooling system – Thermosyphon system and pump circulation system; Advantages and disadvantages of air cooling and water cooling systems; The components of water cooling system–fan, radiator, pump and thermostat; The necessity of lubrication system; S.A.E rating of lubrication system; Types of lubrication system; Petrol lubrication and high pressure lubrication system.	Automotive Engineering, Jain and Asthana, Tata McGraw Hill.		
		Fuel feed system	Conventional fuels and alternative fuels: Cetane and octane numbers; Types of carburetors; Working of simple carburetor; Multi point and single point fuel injection systems; Different fuel transfer pumps; Working of S.U electrical and A.C mechanical pump; Fuel filters; Fuel injection pump; Fuel injectors; Use of Hydrogen and Ethanol as an alternating fuel (Basic concept only).	Automobile Engg. RB gupta		

APPROVED	SIGN HOD
DATE :- 27/01/2025	

SYLLABUS COVERAGE		Total Periods:42		Theory:42		
Sr No	Period Nos	Topic	Details	Instruction Reference	Additional Study Recommended	Remark
3	17-27	**Unit III** Ignition system	Introduction to ignition system; Battery Ignition systems and magneto Ignition system; Electronic Ignition system; Construction and working of lead acid battery; Elements of charging system; Elements of starting system; Types of lights used in the automobile:	Automobile Engineering VolI,II, Kirpal Singh.		
		Transmission and steering system	General arrangement of clutch; Principle of friction clutches; Constructional details of Single plate clutch; Constructional details of multi-plate clutch; Constructional details of centrifugal clutch; Necessity for gear ratios in transmission; Types of gear boxes; Working of sliding mesh gear box; Working of constant mesh gear box; Working of propeller shaft Working of propeller shaft; Working of universal joint; Working of differential; Types of rear axle; Purpose of front axle; Necessity of steering system; Caster, camber and king pin inclination; Rack and pinion steering system; Power steering	Automotive Engineering, Jain and Asthana, Tata McGraw Hill.		
4	28-36	Unit IV Suspension system	Necessity of suspension system; Torsion bar suspension systems; Leaf spring and coil spring suspension system; Independent suspension for front wheel and rear wheel; Working of telescopic shock absorber; Functions of brakes; Types of brakes; Working of internal expanding brake; Working of disc brake	Automobile Engg. RB gupta		
5	37-42	Unit V Special vehicles	Introduction to Special vehicles; Tractor; Motor grader; Scrappers; Excavators; Duper trucks. Hybrid and Electric Vehicles:			
		Hybrid and Electric Vehicles	Introduction to Hybrid and Electric Vehicles; History of Hybrid and Electric Vehicles; Social and environmental importance of Hybrid and Electric vehicles; Electric Vehicle drive train (line diagram only).			

APPROVED	SIGN HOD
DATE :- 27/01/2025	