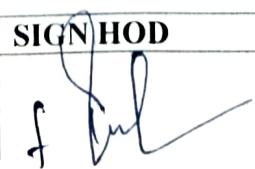


## PLANNED SYLLABUS COVERAGE

| <b>“PVCNSSK”<br/>G.P Bilaspur</b> |            | <b>Department: Mechanical Engg. Subject –Automobile Engineering(4<sup>th</sup>)<br/>(MEPE202-3)</b> |   |   |                                       |         |
|-----------------------------------|------------|---|---|---|---------------------------------------|---------|
|                                   |            | <b>Course - Diploma</b>   |   | <b>Duration – 3 Years</b>   |                                       |         |
| <b>SYLLABUS<br/>COVERAGE</b>      |            | <b>Total Periods -42</b>  |   | <b>Theory –42 hours</b>   |                                       |         |
| Sr<br>No                          | Period Nos | Topic   | Details   | Instruction<br>Reference  | Additional<br>Study<br>Recommendation | Remarks |
| 1                                 | 1-6        | <b>UNIT-I:<br/>Introduction to<br/>basic<br/>structure<br/>of an<br/>automobile.</b>                | 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<br>Engineering<br>VolI,II,<br>Kirpal<br>Singh.                     |                                       |         |
| 2.                                | 7-16       | <b>Unit-II:<br/>Cooling<br/>and<br/>lubrication<br/>system.</b>                                     | The necessity of cooling system; Types of cooling system-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<br>Engineering, Jain<br>and<br>Asthana,<br>Tata<br>McGraw<br>Hill. |                                       |         |
|                                   |            | <b>Fuel feed<br/>system</b>   | 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.<br>RB gupta  |                                       |         |

|                    |   |
|--------------------|---|
| <b>APPROVED</b>    | <b>SIGN HOD</b>   |
| DATE :- 27/01/2026 |  |

| SYLLABUS COVERAGE |            | Total Periods: 42                |  | Theory: 42  |                              |         |
|-------------------|------------|----------------------------------|--|---|------------------------------|---------|
| Sr No             | Period Nos | Topic                            | Details  | Instruction Reference                                       | Additional Study Recommended | Remarks |
| 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 Vol I, 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; Dumper 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 :- 27/01/2026 |  |