| Discipline: MECHANICAL | Semester: 6th | Name of the Teaching Faculty: SRI.SUMANTA BISWAL PTGF(Mechanical) |
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| Subject: AE&HV | No. of days/per week class allotted: 4 | Semester From date: To date: No of weeks: 15 |
| Week | Class Day | Theory Topics: |
| 1st | 1st | INTRODUCTION: Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram) |
| | 2nd | Clutch System: Need, Types (Single & Multiple) and Working principle with sketch |
| | 3rd | Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box |
| | 4th | Concept of automatic gear changing mechanisms |
| 2nd | 1st | Propeller shaft: Constructional features , Differential: Need, Types and Working principle |
| | 2nd | **BRAKING SYSTEM**: Braking systems in automobiles: Need and types |
| | 3rd | Mechanical Brake , Hydraulic Brake , Air Brake |
| | 4th | Air assisted Hydraulic Brake Vacuum Brake |
| 3rd | 1st | **IGNITION & SUSPENSION SYSTEM**: Describe the Battery ignition and Magnet ignition system, Spark plugs: Purpose, construction and specifications |
| | 2nd | State the common ignition troubles and its remedies , Description of the conventional suspension system for Rear and Front axle |
| | 3rd | Description of independent suspension system used in cars (coil spring and tension bars) ,Constructional features and working of a telescopic shock absorber |
| | 4th | **COOLING AND LUBRICATION**: Engine cooling: Need and classification ,Describe defects of cooling and their remedial measuresDescribe the Function of lubrication ,Describe the lubrication System of I.C. engine |
| 4th | 1st | **FUEL SYSTEM**: Describe Air fuel ratio ,Describe Carburetion process for Petrol Engine |
| | 2nd | Describe Multipoint fuel injection system for Petrol Engine Describe the working principle of fuel injection system for multi cylinder Engine ,Filter for Diesel engine |
| | 3rd | Describe the working principle of Fuel feed pump and Fuel Injector for Diesel engine |
| | 4th | **ELECTRIC AND HYBRID VEHICLES**: Introduction, Social and Environmental importance of Hybrid and Electric Vehicles |
| | 1st | Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles |
| | 2nd | Battery for Electric Vehicles, Battery types and fuel cells |

4.2.23. Sumanta Biswal (PTGF)