**LESSON PLAN**

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| **Discipline:**Mechanical Engg. | **Semester:**Sixth(6th ) | **Name Of The Faculty:** Er Kishore Kumar Prusty |
| **Subject:**Automobile Engg & Hybrid Vehicles (Th-2) | **No of days/ week class allotted:**Six(6) | **Semester from date:** 16.01.2024 **to Date:** 26. 04.2024**No of weeks: 15** |
| **WEEK** | **CLASS DAY** | **THEORY TOPICS** |
| 1st | 1st  | Introduction to the subject |
| 2nd  | Automobiles: Definition, Need & Classification |
| 3rd  | Layout of automobile chassis |
| 4th  | Major components of automobile chassis |
| 5th  | Clutch System: Need, Types, Working principle of Single plate clutch with sketch |
| 6th  | Working principle of multiple plate clutch with sketch |
| 2nd | 1st  | Gear Box, Purpose of gear box |
| 2nd  | Construction & working of a four-speed gear box  |
| 3rd  | Concept of automatic gear changing mechanisms |
| 4th  | Working of automatic gear changing mechanisms |
| 5th  | Propeller shaft & its function |
| 6th  | Constructional features of propeller shaft  |
| 3rd | 1st  | Differential: Need, types and its constructional features |
| 2nd  | Working Principle of differential |
| 3rd  |  **Review Class** |
| 4th  |  **Review Class** |
| 5th  | Braking System in automobile & its need and type |
| 6th  | Mechanical Brake |
| 4th | 1st  | Hydraulic brake |
| 2nd  | Working of hydraulic brake |
| 3rd  | Air brake |
| 4th  | Air assisted hydraulic brake |
| 5th  | Vacuum Brake |
| 6th  | **Monthly Test 01** |
| 5th | 1st  |  **Review Class** |
| 2nd  |  **Review Class** |
| 3rd  | Describe Battery ignition system |
| 4th  | Describe Magnet ignition system |
| 5th  | Describe the construction of a sparkplug |
| 6th  | State purpose and specification of a spark plug. |
| 6th | 1st  | State Common ignition trouble and its remedies |
| 2nd  | Description of the conventional suspension system for rear axle |
| 3rd  | Description of the conventional suspension system for front axle |
| 4th  | Description of independent suspension system used in cars (coil spring and tension bars) |
| 5th  | Constructional features of a telescopic shock absorber |
| 6th  | Working of a telescopic shock absorber. |
| 7th  | 1st  |  **Review Class** |
| 2nd  |  **Review Class** |
| 3rd  |  **Monthly Test 02** |
| 4th  | Engine cooling: Need and Classification |
| 5th  | Describe defects of cooling |
| 6th  | Describe their remedial measures |
| 8th  | 1st  | Describe the Function of lubrication |
| 2nd  | Describe the lubrication System of I.C. engine. |
| 3rd  | Cont… |
| 4th  | **Review Class** |
| 5th  | **Review Class** |
| 6th  | Describe Air fuel ratio |
| 9th  | 1st  | Describe carburetion process for petrol engine |
| 2nd  | Describe Multipoint fuel injection system for petrol engine |
| 3rd  | Describe the working principle of fuel injection system for multi cylinder engine. |
| 4th  | Cont… |
| 5th  | Filter for diesel engine |
| 6th  | **Monthly Test 03** |
| 10th | 1st  | Describe the working principle of fuel feed pump for diesel engine |
| 2nd  | Describe the working principle of injector for diesel engine |
| 3rd  | **Review Class** |
| 4th  | **Review Class** |
| 5th  | Introduction, social and environment importance of hybrid vehicles. |
| 6th  | Social and environment importance of electric vehicles. |
| 11th | 1st  | Description of electric vehicles |
| 2nd  | Operational advantages of electric vehicles |
| 3rd  | Present performance and applications of electric vehicles |
| 4th  | Battery for electric vehicles |
| 5th  | Battery types and fuel cells |
| 6th  | **Monthly Test 04** |
| 12th | 1st  | Hybrid vehicles, types of hybrid and electric vehicles |
| 2nd  | Parallel, series configuration. |
| 3rd  | Parallel & series configurations. |
| 4th  | Drive train |
| 5th  | Working of Drive train |
| 6th  | Solar powered vehicles |
| 13th | 1st  | Function of Solar powered vehicle. |
| 2nd  | Working of Solar powered vehicle. |
| 3rd  | **Review Class** |
| 4th  | **Review Class** |
| 5th  | **Review Class** |
| 6th | **Review Class** |
| 14th  | 1st  | **Review Class** |
| 2nd  | **Review Class** |
| 3rd  | **Review Class** |
| 4th  | **Review Class** |
| 5th  | **Review Class** |
| 6th | **Review Class** |
| 15th  | 1st  | **Review Class** |
| 2nd  | **Review Class** |
| 3rd  | **Review Class** |
| 4th  | **Review Class** |
| 5th  | **Review Class** |
| 6th | **Review Class** |