**Lesson Plan**

Name of the Faculty : Vipin Kumar

Discipline : Mechanical Engg.

Semester : 5th

Subject : T.O.M.

Lesson plan duration : 15 weeks (from Sept, 2023 to Jan, 2024)

|  |  |
| --- | --- |
|  Week | Theory |
| Lecture Day | Topic (including assignments /tests) |
|   Week 1 | 1st | **Simple Mechanisms**: Introduction to link, kinematic pair,  |
| 2nd | lower and higher pair |
| 3rd | Kinematic chain |
| 4th | Mechanism |
|  Week 2 | 1st | Inversions of Mechanism  |
| 2nd | Different types of mechanisms |
| 3rd | Examples |
| 4th | Revision & Assignment |
|  Week 3 | 1st | **Power Transmission**: Introduction to Belt and Rope drives |
| 2nd | Types of belt drives |
| 3rd | Types of pulleys |
| 4th | Velocity ratio, slip and creep |
|  Week 4 | 1st | Crowning of pulleys (Simple Numerical) |
| 2nd | Flat and V belt drive |
| 3rd | Ratio of driving tensions, power transmitted, centrifugal tension, |
| 4th | Condition for maximum horse power |
|  Week 5 | 1st | Different types of chains and their terminology |
| 2nd | Gear terminology |
| 3rd | Types of gears and their applications |
| 4th | Simple and compound gear trains |
|  Week 6 | 1st | Power transmitted by simple spur gear |
| 2nd | Simple Numerical Practice |
| 3rd | Assignment & Revision |
| 4th | Test |
|  Week 7 | 1st | **Flywheel**: Principle and applications of flywheel |
| 2nd | Turning - moment diagram of flywheel for different engines |
| 3rd | Fluctuation of speed |
| 4th | Fluctuation of energy |
|  Week 8 | 1st | Coefficient of fluctuation of speed |
| 2nd | Coefficient of fluctuation of energy |
| 3rd | Simple numerical problems on fluctuation of speed and fluctuation of energy |
| 4th | Turning Moment Diagram for flywheel |
|  Week 9 | 1st | Assignment & Revision |
| 2nd | Test |
| 3rd | **Governor**: Principal of governor |
| 4th | Watt Governor |
|  Week 10 | 1st | Porter Governor |
| 2nd | Hartnel governor |
| 3rd | Numerical based on watt governor |
| 4th | Hunting, Isochronism, Stability, |
|  Week 11 | 1st | Sensitiveness of a governor |
| 2nd | Assignment & Revision |
| 3rd | Test |
| 4th | **Balancing**: Concept of balancing |
|  Week 12 | 1st | Introduction to balancing of rotating masses |
| 2nd | simple numerical |
| 3rd | several masses rotating in different planes |
| 4th | Simple problems |
|  Week 13 | 1st | Numerical Practice |
| 2nd | Assignment & Revision |
| 3rd | **Vibrations**: Concept of vibrations |
| 4th | longitudinal, transverse and torsional vibrations |
|  Week 14 | 1st | simple numerical |
| 2nd | Damping of vibrations |
| 3rd | Causes of vibrations in machines |
| 4th | Harmful Effects of Vibrations |
|  Week 15 | 1st | Remedies to curb vibrations |
| 2nd | Revision & Assignment |
| 3rd | Revision & Assignment |
| 4th | Revision & Assignment |