**Lesson Plan**

**Name of the faculty : KULDEEP SINGH**

**Discipline : Mechanical Engineering**

**Semester : 5th**

**Subject : Theory of Machines**

**Lesson Plan Duration: 16 weeks**

**Work Load : (3 Theory 2 Practical’s)**

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|  | **Theory** | **Practical** |
| **Week** | **Lecture Day** | **Topics** |  |
| 1st | 1st | **Unit 1 Simple Mechanisms** Introduction to link | To study inversion of Four Bar Mechanism, Single Slider Crank Chain Mechanism and Double Slider Crank Chain Mechanism with the help of working models. |
| 2nd | kinematic pair |
| 3rd | lower and higher pair, |
| 4th | Kinematic chain, |
| 2nd | 5th | Mechanism |
| 6th | Inversions of mechanism |
| 7th | Different types of mechanisms |
| 8th | Degree of Freedom  |
| 3rd | 9th | **Unit 2 Power Transmission** Introduction to Belt and Rope drives | Viva |
| 10th | Types of belt drives and types of pulleys |
| 11th | Concept of velocity ratio, slip and creep; |
| 12th | crowning of pulleys |
| 4th | 13th | Flat and V belt drive: Ratio of driving tensions, | To study various kinds of belts drives and gear trains with the help of working models. |
| 14th | power transmitted, |
| 15th | centrifugal tension and condition for maximum horse power |
| 16th | Different types of chains and their terminology |
| 5th | 17th | Gear terminology | Viva |
| 18th | types of gears and their applications; |
| 19th | simple and compound gear train |
| 20th | power transmitted by simple spur gear |
| 6th | 21st | **SESSIONAL- Ist** | To find the moment of inertia of a flywheel. |
| 22nd | **Unit 3 Flywheel** Principle and applications of flywheel |
| 23rd | Turning - moment diagram of flywheel for different engines |
| 24th | Fluctuation of speed |
| 7th | 25th | fluctuation of energy  | Viva |
| 26th | Coefficient of fluctuation of speed |
| 27th | coefficient of fluctuation of energy |
| 28th | Simple numerical problems on fluctuation of speed |
| 8th | 29th | Simple numerical problems on fluctuation of energy | To Study the different types of centrifugal governors & to plot graph between R.P.M & Displacement |
| 30th | **Unit 4 Governor** Principal of governor |
| 31st | Simple description and working of Watt governor |
| 32nd | Simple description and working of Porter governor |
| 9th | 33rd | Simple description and working of Hartnel governor | viva |
| 34th | Simple numerical based on watt governor |
| 35th | Hunting of governor |
| 36th | Isochronisms of governor |
| 10th | 37th | Stability, sensitiveness of a governor | To construct cam profile for uniform velocity, SHM and uniform acceleration and retardation on drawing sheet. |
| 38th | Simple numerical on governor |
| 39th | **SESSIONAL- IInd** |
| 40th | **Unit 5 Balancing** Introduction to Balancing |
| 11th | 41st | Concept of balancing |
| 42nd | Introduction to balancing of rotating masses |
| 43rd | simple numerical on rotating masses |
| 44th | simple numerical on rotating masses on same plane  |
| 12th | 45th | Simple problems related to several masses on same plane | viva |
| 46th | several masses rotating in different planes |
| 47th | problems related to several masses rotating in different planes |
| 48th | Revision of Balancing  |
| 13th | 49th | **Unit 6Vibrations** Concept of vibrations | To perform the experiment of Balancing of rotating parts and find the unbalanced couple and forces |
| 50th | Types of vibrations |
| 51st | longitudinal, transverse vibrations |
| 52nd | torsional vibrations |
| 14th | 53rd | simple numerical on vibrations |
| 54th | Damping of vibrations |
| 55th | Causes of vibrations in machines |
| 56th | harmful effects of vibrations |
| 15th | 57th | Remedies of vibrations | Viva |
| 58th | Simple numerical on vibrations on longitudinal, transverse vibrations. |
| 59th | Simple numerical on torsional vibrations. |
| 60th | **SESSIONAL- IIIrd** |