# Lesson Plan

Name of the faculty : JEEVAN KUMAR

Discipline : Mechanical Engineering

Semester : 5th

Subject : Theory of Machines

Lesson Plan Duration: 15 weeks

Work Load : (3 Periods/Week)

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|  | **Theory** | |
| **Week** | **Lecture Day** | **Topics** |
| 1st | 1st | **Unit 1Simple Mechanisms** Introduction to link |
| 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 |
| 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, |
| 14th | power transmitted, |
| 15th | centrifugal tension and condition for maximum horse power |
| 16th | Different types of chains and their terminology |
| 5th | 17th | Gear terminology |
| 18th | types of gears and their applications; |
| 19th | simple and compound gear train |
| 20th | power transmitted by simple spur gear |
| 6th | 21st | **SESSIONAL I** |
| 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 |
| 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 |
| 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 |
| 34th | Simple numerical based on watt governor |
| 35th | Hunting of governor |
| 36th | Isochronisms of governor |

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| 10th | 37th | Stability, sensitiveness of a governor |
| 38th | Simple numerical on governor |
| 39th | **SESSIONAL II** |
| 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 |
| 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 |
| 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 |
| 58th | Simple numerical on vibrations on longitudinal, transverse vibrations. |
| 59th | Simple numerical on torsional vibrations. |
| 60th | **SESSIONAL III** |