**Lesson Plan**

Name of the Faculty : Mr. Sandeep Chhillar (Theory & Practical)

Discipline : Mechanical Engineering

Semester : 6th

Subject : Dynamics of Machine (PCC-ME-308-G)

Lesson Plan Duration : 15 Weeks

\*\* Work Load (Lecture/Practical) per week (in hours): Lectures-03, Practicals-01

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| **Week** | **Theory** | | **Practical** | |
| **Lecture Day** | **Topic**  **(including assignment/test)** | **Practical day** | **Topic** |
| 1st | 1st | Static and Dynamic Force Analysis: Static force analysis of planer mechanisms | 1st | To perform experiment on Watt and Porter Governors to prepare performance characteristic Curves, and to find stability & sensitivity. |
| 2nd | dynamic force analysis including inertia |
| 3rd | Dynamics force analysis: frictional forces of planer mechanisms |
| 2nd | 4th | Dynamics of Reciprocating Engines: engine types, indicator diagrams | 2nd | To perform experiment on Proell Governor to prepare performance characteristic curves, and to find stability & sensitivity. |
| 5th | gas forces, equivalent masses, inertia forces, |
| 6th | bearing loads in a single cylinder engine |
| 3rd | 7th | crankshaft torque, engine shaking forces & Assignment no-1 | 3rd | To perform experiment on Hartnell Governor to prepare performance characteristic Curves,  and to find stability & sensitivity. |
| 8th | Balancing of Rotating Components: static balance |
| 9th | Balancing of Rotating Components: dynamic balance |
| 4th | 10th | balancing of rotating masses, two plane balancing | 4th | To study gyroscopic effects through models. |
| 11th | Graphical and analytical methods, balancing of rotors, |
| 12th | Balancing machines, field balancing. |
| 5th | 13th | Balancing of Reciprocating Parts: | 5th | To determine gyroscopic couple on Motorized Gyroscope. |
| 14th | Balancing of single cylinder engine |
| 15th | balancing of multi cylinder; inline, radial |
| 6th | 16th | balancing of multi cylinder V type engines, | 6th | To perform the experiment for static balancing on static balancing machine. |
| 17th | firing order & Assignment no-2 |
| 18th | Governors: introduction, types of governors |
| 7th | 19th | characteristics of centrifugal governors, | 7th | To perform the experiment for dynamic balancing on dynamic balancing machine. |
| 20th | gravity controlled Governors |
| 21st | characteristics of spring controlled centrifugal governors |
| 8th | 22nd | Hunting of centrifugal governors, inertia governors. | 8th | Determine the moment of inertial of connecting rod by compound pendulum method and tri-flair suspension pendulum. |
| 23rd | Dynamometers: types of dynamometers |
| 24th | Dynamometers:,Prony brake, rope brake |
| 9th | 25th | belt transmission dynamometer |  |  |
| 26th | band brake dynamometers, torsion dynamometer, |
| 27th | hydraulic dynamometer & Assignment no-3 |
| 10th | 28th | Gyroscope: Type of gyroscopes, |  |  |
| 29th | gyroscopic forces and couples |
| 30th | gyroscopic stabilization, ship stabilization |
| 11th | 31st | stability of four wheel vehicles moving on curved paths |  |  |
| 32nd | stability of two wheel vehicles moving on curved paths |
| 33rd | Stability of four wheel drive on moving on curved paths |
| 12th | 34th | Revision of Syllabus with numerical |  |  |
| 35th | Revision of Syllabus with numerical |
| 36th | Revision of Syllabus with numerical |
| 13th | 37th | Revision of Syllabus with numerical |  |  |
| 38th | Revision of Syllabus with numerical |
| 39th | Revision of Syllabus with numerical |