



NATIONAL INSTITUTE OF TECHNOLOGY MEGHALAYA
DEPARTMENT OF MECHANICAL ENGINEERING
THEORY OF MACHINE LABORATORY

List of experiments perform:

1) Gyroscopic Experiment

- i. To verify the laws of gyroscopic couple with the help of motorized Gyroscope.

2) Static and Dynamic balancing Experiment

- i. Explanation and determination of unbalance.
- ii. Investigation of static, dynamic and basic unbalance.
- iii. Balancing process.

3) Belt friction Experiment

- i. To understand influence of angle of contact, coefficient of friction and belt force.
- ii. To understand coefficients of friction for various materials.

4) Flywheel Experiment

- i. To determine the mass moment of inertia.
- ii. To compare the time drop actually and theoretically.

5) Whirling of shaft Experiment

- i. Observe the whirling phenomenon.
- ii. Measure the natural frequency of steel shaft.
- iii. Compare the measured natural frequency to that obtained theoretically.

6) Two arm lever Experiment

- i. To determine fundamentals of the equilibrium of moments.
- ii. Action of forces dependent on the lever arm.

7) Fundamental of statics Experiment

- i. To determine accumulation and resolution of forces with force parallelogram.
- ii. To determine equilibrium of forces.
- iii. To determine law of levers, determination of moments and equilibrium of moments.
- iv. To determine combined lever systems.
- v. To determine forces in bearings.

vi. To determine deflection and resolution of force by fixed and free pulleys.

8) Hooke's law Experiment

- i. Investigation of the proportionality of the active force and the spring deflection.
- ii. Determination of the spring constant.
- iii. Series configuration of two tension springs.

9) Cam analysis Experiment

- i. To compare different cam forms.

10) Universal Governor Experiment.

- i. To record the governor characteristic curves and setting curves for:
 - a) Porter governor
 - b) Proell governor
 - c) Harnell governor