10 ME 321   DYNAMICS OF MACHINERY (SI UNITS)
III B.Tech II Semester
(with effect from the academic year 2012-2013)

Lectures/week: 4 Hrs.   *Credits: 4*
University Exam:3 Hrs   *Sessional Marks: 40*
                                                    End Examination Marks: 60

UNIT – I

Friction
        Inclined planes, friction of screws and nuts, pivot and collar, uniform pressure, uniform wear, friction circle and friction axis
Clutches
        Friction clutches, single Disc or plate clutch, multiple disc clutch, cone clutch, Centrifugal clutch

UNIT –II

Brakes and Dynamometers
        Simple block brakes, internal expanding brake, band brake of vehicle, Braking of a vehicle. Dynamometers- absorption and transmission types, General description and methods of operation**.**

UNIT-III

Centrifugal Governors
        Sleeve loaded governors, spring loaded governors, Hartnell, Hartung governors and governors with auxiliary springs, sensitiveness, isochromism, stability and hunting in governors- governor effort and power – controlling force diagrams –insensitiveness**.**

UNIT-IV

Turning Moment Diagrams and Flywheel
        Construction of crank effort and torque diagrams-fluctuation of energy and speed in flywheels – flywheel of an I.C.engine, flywheel of a punching press – determination of moment of inertia- design considerations.

UNIT-V

Gyroscopic Couple and Processional Motion
        Gyroscopic couple – effect of precession on stability of moving vehicles such as motor cars, motor cycles, aero planes and ships – gyroscopic stabilization.

TEXT BOOKS:
1. Theory of Machines   : Khurmi R. S.
2. Theory of Machines   : Thomas Bevan

REFERENCES:
1. Mechanisms and Machine Theory   : Rao J. S. and Dukkipati R. V.
2. Theory of Machines   : Joseph Edward Shigely
3. Theory of Machines   : Rattan S. S.