PHY 101 GENERAL PHYSICS I: (3 Units) L 30: PO: T 15)

Space and Time,

frame of reference,

Invariance of physical law,

relativity of simultaneity,

relativity of time interval,

relativity of length,

Units and dimension,

standard and units,

unit consistency and conversions,

Kinematics; `displacement, Time, and average velocity, instantaneous velocity, average acceleration, motion with constant acceleration, freely falling bodies, position and velocity vector, acceleration vector, projectile motion, motion in a circle and relative velocity.

Vectors: units vectors, addition vectors, products vectors. Fundamental Laws of Mechanics; forces and interaction, Newton's laws of motion, mass and weight.

Statics and dynamics: application of Newton's laws, dynamics of

particles, frictional forces dynamics of circular motion.

Galilean invariance; Universal gravitational; work and energy; Rotational dynamics and angular momentum; Conservation laws.