

PHYSICS 103
PHYSICS FOR LIFE SCIENCE
(3.0 ; 3 credits)

Textbook : College Physics
By : Serway & Faughn
Fifth Edition, 1999
(Saunders College Publishing)

Contents:

1. Units and Dimensions .

2. Scalars and Vectors .

Addition, subtraction and multiplication of vectors.

3. Kinematics .

Rectilinear motion, displacement, velocity and acceleration, uniform acceleration, motion of falling bodies, projectiles, addition of velocities, reference frames, uniform circular motion, non-uniform circular motion .

4. Dynamics .

Newton's laws, mass and weight, applications of Newton's laws, static equilibrium, friction, impulse and momentum, elastic and inelastic collisions, center of mass.

5. Energy .

Work, kinetic and potential energy, conservation of energy, conservative and non conservative forces, power.

6. Gravitation .

Gravitational force, gravitational potential energy, Kepler's laws of planetary motion, satellite orbits.

7. Rotational Equilibrium .

Rotational equilibrium, torque and angular momentum, center of mass and center of gravity, rotational dynamics, moment of inertia, rotational kinetic energy, conservation of angular momentum.