B.Sc. Semester-I (Physics Minor) (Generic Elective –GE)

B.Sc. Semester-I

Course code: PH-MN 101

Total Credits: 04 (Theory: 2, Practical; 2)

Total Hrs: Theory: 30, Practical: 60

PH-MN 201 (Theory)

Unit 1	**Waves and Oscillations:** **(Waves and Oscillation By N Subrahmanyam and BrijLal)**
	Wave Motion(4.1), What propagates in wave (4.2), Characteristics of wave motion(4.3), Transverse wave motion (4.4),Relation between frequency and wavelength (4.7), Equation of simple harmonic wave (4.11),Differential equation of wave motion (4.12) particle velocity and phase velocity(4.13), Energy of progressive wave(4.15),Laws of transverse vibration of string (7.3), Melde's experiment(7.5)
Unit 2	**Elasticity (Properties of Matter by D. S. Mathur, S. Chand & Co., 2009)**
	Introduction (8.1), Load, stress and strain (8.2), Hooke's law (8.3), ductility, brittleness and plasticity (8.4), elastic behaviour of solids in general (8.5), factors affecting elasticity (8.7), three types of elasticity (8.8), equivalence of a shear to a compression and an extension at right angles to each other (8.9), deformation of a cube – bulk modulus (8.12), modulus of rigidity (8.13), Young's modulus (8.14), relations connecting the elastic constant (8.15), Poisson's ratio (8.16), relations for K and n in terms of Poisson's ratio (8.17), limiting values of σ (8.18)

ReferenceBooks:

1. Mechanics (Berkley Physics Course 1 by C Kittle, W D Knight, M.Alvine and A.Ruderman,Tata McGraw-Hill, 1991.
2. University Physics byYoungand R.Freedman,Pearson 13th Ed., 2013.