



Code	Subject Title	Cr. Hrs	Semester
PHY-113	Physics-II (Waves & Oscillation)	3	II
Year	Discipline		
1	Chemistry-II, Mathematics-I, Statistics-I		

**Harmonic Oscillations:**

Simple harmonic oscillation (SHM); Application of S H M; S H M and uniform circular motion, combinations of Harmonic motion Damped Harmonic Motion.

**Wave Topic:**

Mechanical waves; Traveling waves; Waves speed; Waves equation; Power and intensity in wave motion; Principle of superposition. (Basic ideas);

**Sound Topic:**

Beats Phenomenon; Doppler Effect.

**Thermodynamics and Kinetic Theory of Gases:**

Kinetic theory of the ideal gas, work done on an ideal gas internal energy of an ideal gas Intermolecular forces.

**Statistical Mechanics:**

Statistical, Distribution and Mean values; Distribution of molecular speeds; Brownian motion.

**Heat:** Review of previous concepts; First law of Thermodynamics; Transfer of heat;

**Entropy and Second law of Thermodynamics:**

Reversible and irreversible Process, Second Law; Cycle; Carnot engines Thermodynamic temperature scale; Entropy; Joule – Thomson effect

**Recommended Books:**

1. Physics Vol. I & II (extended) by Resnick, Halliday and Krane, 4<sup>th</sup> and Sons Inc, New York.
2. Fundamentals of Physics by Halliday Resnick and Krane, John Wiley and Sons Inc, New York.
3. University Physics 8<sup>th</sup> Edition by Sears, Zemansky and Young, Addison – Wesley, Reading (MA), USA.
4. Physics by Alonso and Finn; Addison-Wesley, Reading (MA) USA.