

PH-127 Applied Physics for Engineers

Properties of Matter: Elasticity and modulus of elasticity, Bending of beams, Cantilever

Fluids: Steady and turbulent flow, Bernoulli's theorem, Viscosity, Surface tension, Surface energy, Angle of contact

Heat & Thermodynamics: Heat, temperature and theories of heat, Adiabatic and isothermal processes, The four laws of thermodynamics, Thermodynamic functions, Efficiency of heat engines, Carnot's cycle, Entropy, Reversible process and cycles, Thermodynamic equilibrium, Introduction to heat transfer mechanisms

Optics: Waves and oscillations , Simple harmonic motion, Types of wave motion, Optics of light , Interference , Diffraction, Polarization , Double refraction , Dispersion, Types and uses of deviation lasers

Electricity and Magnetism: Electric charges, Electric field, Electric potential , Coulomb's law, Gauss's law, Capacitors and dielectrics, Electric current , Ohm's law, Magnetic properties of matter, Magnetic field , Magnetic force on current , Ampere's law, Faraday's law, and Lenz's law

Sound: Speed of sound , Different types of sound waves

Recommended book(s)

Text Books:

1. Halliday & Resnick , Fundamentals of Physics, 10th edition, Wiley, 2013

Reference Books:

1. Thomas L. Floyd, Electronic devices, 9th edition, Pearson, 2011