

UNITS	DESCRIPTION
UNIT-I	<i>The wave equation, general solution of one dimensional wave equation; Harmonic waves; Standing waves on a string of fixed length; Energy of a vibrating string The wave equation for longitudinal waves on a thin cylindrical rod; Energy density and energy transmission in waves; Application to Earthquakes. Standing waves on a stretched rectangular membrane: solution by method of separation of variables; normal modes of vibrations.</i>
UNIT-II	<i>General Theory of Image Formation: Cardinal Points of an optical system, general relationships, thick lens formula and lens combination, langrange equation of magnification. Abberations: Chromatic and monochromatic abberations and their reductions. Corrector plates.</i>
UNIT-III	<i>Review of Interference of light; Interference in thin parallel films; Application to Non-reflecting films, Newton rings; Michelson interferometer and its application for precision determination of wavelength; Multiple beam interference; Fabry-Perot interferometer and etalon; Intensity distribution. Fraunhofer diffraction at a slit; the intensity distribution; Two slit diffraction pattern; The intensity distribution.</i>
UNIT-IV	<i>Diffraction at N parallel slits; intensity distribution at an N parallel slits. Resolution of images; Rayleigh criterion; Resolving power of a diffraction grating. Frensel half-period zones; The Zone-Plate; Diffraction at a circular aperture; Diffraction by a straight edge (analysis using halfperiod zones). Polarization by reflection, Malus's law; Double refraction; Refraction in Uniaxial crystals; Optical activity; Rotation of plane of polarization; Origin of optical rotation in liquids and in crystals.</i>