



APPLIED PHYSICS – II

COURSE CONTENT	CODE	SYLLABUS
WAVE MOTION AND ITS APPLICATIONS	1	<ul style="list-style-type: none">1.1 Wave motion1.2 Transverse and longitudinal waves with examples1.3 Definitions of wave velocity, frequency and wave length and their relationship1.4 Principle of superposition of waves1.5 Stationary waves and Resonance tube1.6 Simple Harmonic Motion (SHM):<ul style="list-style-type: none">1.6.1 Definition.1.6.2 Simple harmonic progressive wave and energy transfer
OPTICS	2	<ul style="list-style-type: none">2.1 Basic optical laws<ul style="list-style-type: none">2.1.1 Reflection and refraction2.1.2 Lens formula, power of lens (only formula)2.2 Total internal reflection<ul style="list-style-type: none">2.2.1 Critical angle and conditions for total internal reflection2.2.2 Applications of total internal reflection in optical fiber2.3 Optical Instruments<ul style="list-style-type: none">2.3.1 Simple and compound microscope (introduction and uses)



APPLIED PHYSICS –II

COURSE CONTENT	CODE	SYLLABUS
ELECTROSTATICS AND CURRENT ELECTRICITY	3	<ul style="list-style-type: none">3.1 Coulombs law, Unit of charge3.2 Electric field, Electric lines of force and their properties3.3 Electric flux3.4 Electric Current and its units3.4.1 Direct and alternating current3.5 Kirchhoff's law3.6 Wheatstone bridge and its applications (meter bridge)3.7 Concept of terminal potential difference and Electro motive force (EMF)
ELECTROMAGNETISM	4	<ul style="list-style-type: none">4.1 Magnetic field and its units4.1.1 Magnetic intensity4.1.2 Magnetic lines of force4.1.3 Magnetic flux and units4.2 Concept of electromagnetic induction4.2.1 Faraday's Laws and Lenz's law4.3 Magnetic Force on moving charge4.3.1 Force on current carrying conductor4.3.2 Force on rectangular coil placed in magnetic field4.4 Moving coil galvanometer:-principle, construction and working4.4.1 Conversion of a galvanometer into ammeter and voltmeter



APPLIED PHYSICS –II

COURSE CONTENT	CODE	SYLLABUS
SEMICONDUCTOR AND MODERN PHYSICS	5	<ul style="list-style-type: none">5.1 Energy bands in solids5.2 Types of materials (insulator, semi-conductor, conductor)5.3 p-n junction<ul style="list-style-type: none">5.3.1 Junction diode and V-I characteristics5.3.2 Types of junction diodes (Zener and Photo Diode)5.3.3 Diode as rectifier – half wave and full wave rectifier (centre taped)5.4 Lasers:<ul style="list-style-type: none">5.4.1 Energy levels, ionization and excitation potentials5.4.2 Spontaneous and stimulated emission5.4.3 Population inversion5.4.4 Pumping methods5.4.5 Types of lasers (Ruby and He-Ne Laser)5.4.6 Laser characteristics5.4.7 Engineering and medical applications of lasers5.5 Nanoscience and Nanotechnology:<ul style="list-style-type: none">5.5.1 Introduction only