

Lesson Plan

Name- Ms. Pujjwal Mittal

Discipline- Common with all streams

Semester-2ndSem

Subject- Applied Physics-II

Duration-15 weeks (From Feb., 2024 to May, 2024)

Workload (per week):- lectures-02 and practicals-02

Week	Theory		Practical	
	Lect. days	Topic	Practical days	Topic
1st	1 st	UNIT1 Wave motion and Applications :- Waves: definition, types (mechanical and electromagnetic wave)	1 st	Familiarization with apparatus (resistor, rheostat, key, ammeter, voltmeter, telescope, microscopes etc.)
	2 nd	Wave motion – transverse and longitudinal with examples, terms used in wave motion like displacement, amplitude, time period, frequency, wavelength, wave velocity, relationship among wave velocity, frequency and wave length	2 nd	Practical File Checking
2 nd	1 st	Simple harmonic motion (SHM) : definition, examples	1 st	To find the time period of a simple pendulum
	2 nd	Cantilever: definition, formula of time period (without derivation)	2 nd	Practical File Checking
3rd	1 st	Free, forced and resonant vibrations with examples	1 st	Revision and viva
	2 nd	Sound waves: types (infrasonic, audible, Ultrasonic) on the basis of frequency, noise and coeff. Of absorption.	2 nd	To study variation of time period of a simple pendulum with change in length of pendulum.
4th	1 st	UNIT-2 Optics Reflection and refraction of light with laws, refractive index	1 st	Practical file checking
	2 nd	Lens: introduction, lens formulae (no derivation), power of lens and simple numerical problems	2 nd	Revision and viva
5th	1 st	Total internal reflection and its applications, critical angle and conditions for total internal reflection	1 st	To determine and verify the time period of Cantilever

	2 nd	Superposition of waves (concept only), definition of Interference, Diffraction and Polarization of wave	2 nd	Practical file Checking
6th	1 st	Introduction to Microscope, Telescope and their applications	1 st	Revision and viva
	2 nd	Revision and test	2 nd	To verify Ohm's laws by plotting a graph between voltage and current.
7th	1 st	UNIT-3 Electrostatics and electricity <ul style="list-style-type: none"> • Electric charge, unit of charge, conservation of charge • Coulomb's law of electrostatics 	1 st	Practical file Checking
	2 nd	Electric field, electric lines of force (definition and properties), electric field intensity due to a point charge	2 nd	Revision and viva
8th	1 st	Definition of electric flux, Gauss law (statement and formula)	1 st	To study color coding scheme of resistance
	2 nd	<ul style="list-style-type: none"> • Capacitor and capacitance (with formula and unit) • Electric current and its SI Unit, direct and alternating current 	2 nd	<ul style="list-style-type: none"> • Practical file Checking • Revision and viva
9th	1 st	<ul style="list-style-type: none"> • Resistance, conductance (definition and unit) • Series and parallel combination of resistances • Ohm's law (statement and formula) 	1 st	To verify laws of resistances in series combination
	2 nd	UNIT-4 Classification of materials and their properties <ul style="list-style-type: none"> • Definition of energy level, energy bands • Types of materials (conductor, semiconductor, insulator and dielectric) with examples, intrinsic and extrinsic semiconductors (introduction only) 	2 nd	<ul style="list-style-type: none"> • Practical file Checking • Revision and viva

10th	1 st	Introduction to magnetism, type of magnetic materials: diamagnetic, paramagnetic and ferromagnetic materials with examples	1 st	Viva- voce
	2 nd	Magnetic field, magnetic lines of force, magnetic flux	2 nd	To verify laws of resistance in parallel combination.
11th	1 st	Electromagnetic induction (definition)	1 st	Practical File Checking
	2 nd	UNIT-5 Modern physics Laser: introduction, principle, absorption, spontaneous emission, stimulated emission, population inversion	2 nd	Revision and viva
12th	1 st	Engineering and medical applications of laser	1 st	To find resistance of galvanometer by half deflection method.
	2 nd	Fibre optics: introduction to optical fibers (definition, principle and parts), light propagation, fiber types (mono-mode, multi-mode), applications in medical, telecommunication and sensors	2 nd	<ul style="list-style-type: none"> • Practical file Checking • Revision and viva
13th	1 st	Nanotechnology: introduction, definition of nanomaterial's with examples, properties at nanoscale, applications of nanotechnology (brief)	1 st	To verify laws of reflection of light using mirror.
	2 nd	Revision and test	2 nd	<ul style="list-style-type: none"> • Practical file Checking • Revision and viva
14th	1 st	Assignment and worksheets	1 st	To verify laws of refraction using glass slab.
	2 nd	. Whole syllabus revision	2 nd	<ul style="list-style-type: none"> • Practical file Checking • Revision and viva
15th	1 st	Test-1	1 st	Viva-Voice
	2 nd	Test-2	2 nd	Internal Practical