LESSON PLAN

APPLIED PHYSICS II (January 2025 - May 2025)

TEACHER: Mr Rajesh **TRADE: ECE, Mechanical B**

WEEK	DAY	TOPICS TO BE COVERED(THEORY)	WEEK	PRACTICAL
1	1	**UNIT 1:** Waves: definition, types (mechanical and electromagnetic wave)	1	Familiarization with apparatus (resistor, rheostat, key, ammeter voltmeter, telescope
	2	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	1	Simple harmonic motion (SHM): definition, examples Cantilever: definition, formula of time period (without derivation) Free, forced and resonant vibrations with examples	2	To find the time period of a simple pendulum.
	2	Sound waves: types (infrasonic, audible, ultrasonic) on the basis of frequency, noise, coefficient of absorption of sound, echo		
3	1	REVISION OF UNIT 1(ASSIGNMENT)	3	To study variation of time period of a simple pendulum with change in length of pendulum.
	2	REVISION OF UNIT 1(ASSIGNMENT)		
4	1	CLASS TEST/QUIZ	4	Completing previous experiments
	2	**UNIT 2:**Reflection and refraction of light with laws, refractive index		
5	1	Lens: introduction, lens formulae (no derivation), power of lens and simple numerical problems	5	To determine and verify the time period of Cantilever.
	2	Total internal reflection and its applications, critical angle and conditions for total internal reflection Superposition of waves (concept only), definition of Interference, Diffraction and Polarization of waves		
6	1	Introduction to Microscope, Telescope and their applications	6	To verify laws of reflection of light using mirror.
	2	REVISION OF UNIT 2 QUIZ/CLASS TEST		
7	1	**UNIT 3**: Electric charge, unit of charge, conservation of charge , Coulomb's law of electrostatics	7	To verify laws of refraction using glass slab.
	2	Electric field, electric lines of force (definition and properties), electric field intensity due to a point charge		
8	1	Definition of electric flux, Gauss law (statement and formula)	8	Completing previous experiments
	2	Capacitor and capacitance (with formula and unit)		

9	1	Electric current and its SI Unit, direct and alternating current Resistance, conductance (definition and unit)	9	MOCK PRACTICAL EXAM
	2	Series and parallel combination of resistances 9 Ohm's law (statement and formula)		
10	1	REVISION OF UNIT 3	10	To verify Ohm's laws by plotting a graph between voltage and current.
	2	REVISION OF UNIT 3		
11	1	QUIZ/CLASS TEST	11	To verify laws of resistances in series combination
	2	**UNIT 4**:Definition of energy level, energy bands 2 Types of materials (conductor, semiconductor, insulator and dielectric		
12	1	intrinsic and extrinsic semiconductors (introduction only)	12	To verify laws of resistance in parallel combination.
	2	Introduction to magnetism, type of magnetic materials: diamagnetic, paramagnetic and ferromagnetic materials with examples		
13	1	Magnetic field, magnetic lines of force, magnetic flux Electromagnetic induction (definition)	13	Completing previous experiments
	2	REVISION OF UNIT 4		
14	1	QUIZ/CLASS TEST	14	To study colour coding scheme of resistance.
	2	**UNIT 5**:Laser: introduction, principle, absorption, spontaneous emission, stimulated emission,population inversion		
15	1	Engineering and medical applications of laser	15	REVISION
	2	Fibre optics: introduction to optical fibers (definition, principle and parts), light propagation, fiber types (mono-mode, multi-mode), applications in medical, telecommunication and sensors		
16	1	Nanotechnology: introduction, definition of nanomaterials with examples, properties at nano scale, applications of nanotechnology	16	REVISION
	2	REVISION OF UNIT 5		