

PHYSICS LESSON PLAN SUMMER 2025				
DISCIPLINE: PHYSICS		SEMESTER: 2nd	NAME OF THE TEACHING FACULTY: MISS SUSHREE SANGITA BEHERA (GF) & MISS SUJATA DAS (GF)	
Subject: APPLIED PHYSICS-II		No. of Days/per week class allotted: 04 classes	Semester From date:04-02-2025 to Date:17.05.2025	
Total period allotted: 60		No. of Weeks: 14		
Sl. No	Week	Class Day	Theory/Practical Topics	NO OF periods allotted
1	1st week/ of February 2025	1ST	Wave motion, transverse and longitudinal waves with examples,	1
		2ND	definitions of wave velocity, frequency and wave length and their relationship, Sound wave.	1
		3RD	light waves and their properties,wave equation($y=rsint$)amplitude, phase,phasedifference,	
		4TH	principle of superposition of waves and beat formation.	1
2	2nd week/ of February 2025	1ST	Simple Harmonic Motion (SHM): definition,	1
		2ND	expression for displacement, velocity, acceleration,time period, frequency etc.	1
		3RD	Simple harmonic progressive wave and energy transfer,study of vibration of cantilever and of its time period	1
		4TH	Free,forced and resonant vibrations with examples.	1
3	3rd week/ of February 2025	1ST	Acoustics of buildings – reverberation, reverberation time, echo, noise, coefficient of absorption of sound,	1
		2ND	methods to control reverberation time and their applications, Ultrasonicwaves–Introduction and properties,engineering and medical applications of ultrasonic.	1
		3RD	Basic optical laws;reflection and refraction,refractive index,Images and image formation by mirrors, lens and thin lenses, lens formula,	1

		4TH	power of lens, magnification and defects. Total internal reflection, Critical angle and conditions for total internal reflection, applications of total internal reflection in optical fiber.	1
4	4th week/ of February 2025	1ST	Optical Instruments; simple and compound microscope,	1
		2ND	astronomical telescope in normal adjustment, magnifying power, resolving power,	1
		3RD	uses of microscope and telescope, optical projection systems.	1
		4TH	Coulombs law, unit of charge, Electric field, Electric lines of force and their properties, ,	1
5	1st Week/ March 2025	1ST	Electric flux, Electric potential and potential difference	1
		2ND	Gausslaw :Application of Gauss law to find electric field intensity of straight charged conductor,	1
		3RD	To find the electric field intensity of plane charged sheet and charged sphere.	1
		4TH	Capacitor and its working, Types of capacitors, Capacitance and its units.	1
6	2nd Week/ March 2025	1ST	Capacitance of a parallel plate capacitor,	1
		2ND	Series and parallel combination of capacitors (related numerical), dielectric and its effect on capacitance, dielectric break down.	1
		3RD	Electric Current and its units, Direct and alternating current,	1
		4TH	Resistance and its units, Specific resistance, Conductance, Specific conductance, Series and parallel combination of resistances.	1
7	3rd Week/ March 2025	1ST	Factors affecting resistance of a wire, carbon resistances and colour coding.	1
		2ND	Ohm's law and its verification, Kirchhoff's laws,	1
		3RD	Wheatstone bridge and its applications (slidewire bridge only),	1

		4TH	Concept of terminal potential difference and Electromotive force (EMF)	1
8	4th Week/ March 2025	1ST	Heating effect of current, Electric power, Electric energy and its units (related numerical problems), Advantages of Electric Energy over other forms of energy	1
		2ND	Types of magnetic materials; dia, para and ferromagnetic with their properties,	1
		3RD	Magnetic field and its units, magnetic intensity, magnetic lines of force, magnetic flux and units,	1
		4TH	Concept of electromagnetic induction, Faraday's Laws,	1
9	1st Week/ April 2025	1ST	Lorentz force (force on moving charge in magnetic field).	1
		2ND	Force on current carrying conductor, force on rectangular coil placed in magnetic field.	1
		3RD	Moving coil galvanometer; principle, construction and working,	1
		4TH	Conversion of a galvanometer into ammeter and voltmeter.	1
10	2nd Week/ April 2025	1ST	Energy bands in solids, Types of materials (insulator, semi-conductor, conductor)	1
		2ND	intrinsic and extrinsic semiconductors, p-n junction	1
		3RD	junction diode and V-I characteristics,	1
		4TH	, types of junction diodes. Diode as rectifier – half wave and full wave rectifier (centre taped).	1
11	3rd Week/ April 2025	1ST	Transistor; description and three terminals, Types-pnp and npn, some electronic applications (list only).	1
		2ND	Photocells, Solar cells; working principle and engineering applications	1
		3RD	Lasers: Energy levels, ionization and excitation potentials;	1

		4TH	spontaneous and stimulated emission;populationinversion,pumpingmethods,	1
12	4th Week/ April 2025	1ST	opticalfeedback,Typesoflasers;Ruby,He- Ne and semiconductor laser	1
		2ND	laser characteristics, engineering and medical applications of lasers	1
		3RD	Fiber Optics:Introduction to optical fibers,light propagation,	1
		4TH	acceptance angle And numerical aperture, fiber types, applications in; telecommunication, medical and sensors.	1
13	1st Week/ may 2025	1ST	Nanoscience and Nanotechnology: Introduction,	1
		2ND	properties at nanoscale, nanotechnology,	1
		3RD	nanotechnology based devices and applications	1
		4TH	REVISION	1
14	2nd Week/ may 2025		REVISION	1
			REVISION	1
			REVISION	1
			REVISION	1