GIET POLYTECHNIC, JAGATPUR,CUTTACK

LESSON PLAN

Name of faculty - Sobhana Samarpita Panda

Discipline - Mechanical , Civil, Electrical, Etc,& Cse Engg.

Semester - 2nd

Subject - Applied physics

Lesson plan duration - 15 week

Work load (lecture/practical) per week (in hours) lectures – 04 Practical -02

Semester from date 4.2 2025 to date 17.5 2025-

week	Theory	
	Lecture day	Topic
1st	1	Wave motion – Introduction, Terms - displacement, amplitude, time period,frequency,wavelength,wave velocity,
	2	Transverse wave motion, longitudinal wave motion
2nd	1	Difference b/w Transverse & longitudinal wave motion
	2	Different wave parameter and their expression
	3	Difference b/w progressive& stationary wave
	4	SHM its differential equation with solution
3rd	1	Relationship among wave velocity, frequency and wave length . Simple Harmonic Motion (SHM):
	2	Sound and light waves and their properties
	3	Principle of superposition of wave and beat formation
	4	Study of vibration of cantilever and its time period
4th	1	Acoustics of buildings – reverberation
	2	reverberation time, Echo, noise, coefficient of absorption of sound
	3	Simple numericals
	4	methods to control reverberation time,Ultrasonics
5th	1	Engineering applications of Ultrasonics
	2	Optics – Introduction, Reflection of Light
	3	Refraction of Light
	4	Refractive index
6th	1	Image formation by mirror and lens
	2	Total internal reflection
	3	Critical angle
	4	Applications of TIR conditions for TIR
7th	1	super Position of Waves, Definition of Interference,

	2	Diffraction and Polarization of Waves Microscope, telescope& their uses
	3	Introduction of Lens, lens Formula (no derivation), Power of Lens Based numerical
	4	Astronomical telescope its adjustment magnifying power,resolving power
8th	1	Electrostatics and Electricity –electric field defination
	2	Introduction, Coulombs law Unit charge
	3	Electric lines of force and their properties
	4	Electric Ipotential and potential differnce
9th	1	Electric Intensity , Electric Flux, Electric potential
	2	Electric field intensity due to a point charge
	3	Electric field intensity of charged conductor
	4	Gauss law(Statement and derivation), Capacitor Capacitance
10th	1	Series combination of capacitors, parallel
	2	combination of capacitors, Ohm's Laws
	3	Dielectric and its effect on capacitance
	4	Numerical based on Grouping of Capacitors, Classification of Materials and their Properties
11th	1	Types of materials Conductor, Semi-Conductor, Insulator and Dielectric with examples
	2	AC and DC unit of current and resistance
	3	intrinsic and extrinsic semiconductors (Introduction only)
	4	Types of magnetic materials Dia materials with example
12th	1	Para and ferromagnetic materials with examples
	2	Magnetic field intensity
	3	Magnetic field and its unit
	4	magnetic Flux, Magnetic lines of force
13th	1	Electromagnetic induction (Definition)
	2	Faraday's law lenz's law
	3	Modern Physics - Introduction
	4	Simple numricals discussed
14th	1	Lasers: full form, Principle
	2	Spontaneous emission, stimulated emission, population inversion Engineering and applications of laser
	3	Medical application of Laser
	4	Fibre optics – Definition, principle, parts, light propagation, fiber types (mono- mode, multi-mode)

		Applications in medical, tele-communication and sensors
15th	1	Introduction to nanotechnology- Definition of nano materials with examples
	2	properties of nano scale
	3	Applications of nanotechnology(brief)
	4	Revision and test

Sobhana Samapta Parida

Sign. Of Teaching Faculty

31/1/25

Sign. Of Sr. Lecturer

Sr. Lecturer
Math & Science
G.I.E.T (Poly), Jagatpur, Ctc.

31.05.25

Sign of PRINCIPAL

GIET (POLYTECHNIC)

Principal
GIET (Polytechnic)
Jagatpur, Cuttack