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 - 17week

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

Semester from date 09.01.2026 to date 08.5 .2026

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 betⁿ Transverse & longitudinal wave motion
	2	Different wave parameter and their expression
	3	Difference betⁿ 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	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 Total internal reflection conditions for Total internal reflection
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 potential 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 capacitor, parallel
	2	combination of capacitor, 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 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	Simple Numerical
16th	1	Revision and test
	2	Previous year question discusssion
	3	Surprise test
	4	Revision
17th	1	Doubt clear
	2	Question Discussion
	3	Class test - 01
	4	Class test -02

Sobhana Samappita Panda
Sign. Of Teaching Faculty

12/01/26
Sign. Of Sr. Lecturer

Sign of PRINCIPAL

GIET (POLYTECHNIC)

Principal
GIET (Polytechnic)
Jagatpur, Cuttack