

**LESSON PLAN**  
 No. of classes available per week-4  
 Total period available-60  
 Class duration-55 minutes  
 2nd Semester Summer (2023-24)

**DEPARTMENT OF MATH & SCIENCE**

<b>Discipline:</b> Math & Science	<b>Semester:</b> 2nd	<b>Name of the Teaching Faculty:</b> NIRUPAMA PANDA, Sr.Lect. Math & Sc. (Phy)
<b>Subject:</b> Engg. Physics(Th-2A)	<b>No of Days/Week class allotted:</b> 4	<b>Semester from Date:</b> 29/01/2024 <b>No of weeks:</b> 15 <b>Branch-</b> E& TC
<b>Week</b>	<b>Class Day</b>	<b>Topics</b>
1st	1st	i) introduction to Units ii) System of units
	2nd	Dimensions and Dimensional Formula
	3rd	Application to Dimensional Analysis
	4th	i) Identification of Scalar and Vector quantities.
2nd	1st	i) Types of Vectors ii) Vector Addition
	2nd	i) Multiplication of Two vectors( Dot product)
	3rd	i) Cross Product
	4th	i) Concept of rest and moving body ii) Equation of motion under gravity
3rd	1st	i) Solving Numericals
	2nd	i) Circular motion
	3rd	i) Solving numericals
	4th	i) Projectile motion. ii) Facts about Projectile.
4th	1st	i) Projectile fired horizontally by making an angle
	2nd	i) Work
	3rd	i) Friction ii) Types of Friction

	4th	i) Laws of limiting Friction
5th	1st	i) Coefficient of Friction
		ii) Methods of Reducing Friction.
	2nd	i) Numericals
		ii) Class test 1 conducted
	3rd	i) Gravitation
4th	ii) Newtons laws of Gravitation	
6th	1st	i) Relation between $g$ and $G$
	2nd	ii) Universal Gravitational Constant.
		i) Variation of $g$ with altitude and depth
	3rd	i) Keplers laws of Planetary motion
7th	1st	i) Numericals
	2nd	i) Oscillations(Simple Harmonic Motion)
	3rd	i) Characteristics of SHM
		ii) Numericals
4th	i) Waves	
8th	1st	ii) Types of wave motion
	2nd	i) Properties of wave motion
	3rd	i) Ultrasonics
		ii) Numericals on heat
	4th	i) Heat
9th	1st	ii) Specific heat
	2nd	i) Latent heat
		ii) Numericals on heat
	3rd	i) Thermal expansion(Examples)
4th	ii) Expansion Co-efficients	
10th	1st	i) Derivation of Expansion Coefficients
	2nd	i) Relation between expansion coefficients
		ii) First law of Thermodynamics.
	3rd	i) Work and Heat
4th	ii) Numericals	
11th	1st	i) Optics
		ii) Reflection & Refraction
	2nd	i) Refractive index
		ii) Numericals
3rd	i) Critical angle & Total Internal Reflection	
4th	i) Refraction through Prism	
11th	1st	ii) Fiber optics
		i) Electrostatics
	2nd	ii) Coulombs laws
		i) Electric potential

		ii) Electric field
		iii) Electric capacitance
	3rd	i) Grouping of capacitors ii) Numericals
	4th	i) Magnetostatics ii) Coulombs laws
12th	1st	i) Magnetic field ii) Magnetic field intensity
	2nd	i) Magnetic lines of force
	3rd	i) Magnetic flux
	4th	Class Test 2 conducted
13th	1st	i) Concept of electric current ii) Ohm's law and its application
	2nd	i) Grouping of resistors ii) Numericals on series and parallel combination of resistors
	3rd	i) Kirchhoff's law & Simple numericals
	4th	i) Balanced condition of wheatstone bridge
14th	1st	i) Electromagnetism ii) Force on a conductor in a uniform magnetic field iii) Fleming's left hand rule
	2nd	i) Faraday's laws of Electromagnetic Induction ii) Fleming's right hand rule
	3rd	i) Comparison between Fleming's left hand and right hand rule ii) Lenz's law iii) Simple numericals
	4th	i) Principle, properties and application of LASER
15th	1st	Wireless Transmission – ground waves, sky waves,
	2nd	Space waves.
	3rd	Simple numerical
	4th	Short type Question Discussion

*Nirupama Panda*  
Signature of Faculty