GOVERNMENT POLYTECHNIC JAJPUR
A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019
Website: https://www.gpjajpur.org E-mail: principalgpjajpur@yahoo.co.in Contact: 9437155107

LESSON PLAN
1ST SEMESTER
No. of classes available per week-4
Total period available-60
Class duration-55 minutes
Teaching Method: Online meeting app, Lecture note, ppt, PDF
Learning Method- Daily Assignment, Unit test, quiz.

DEPARTMENT OF MATH & SCIENCE

LESSON PLAN

Discipline: Math & Science	**Semester: 1st**	**Name of the Teaching faculty: Dr. BISWAMBHAR MOHANTY** **Branch - Mechanical**
Subject: Engg. Physics	**No of Days/Week class alloted: 4**	**Semester from Date:25/10/2022 To Date: 31/01/2023** **No of weeks: 15**

Week	Class Day	Topics
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
		ii) Newtons laws of Gravitation
	4th	i) Relation between g and G
		ii) Universal gravitational constant
6th	1st	i) Variation of g with altitude and depth
	2nd	i) Keplers laws of Planetary motion
	3rd	i)Numericals
	4th	i)Oscillations(Simple Harmonic Motion)
7th	1st	i) Characteristics of SHM
	2nd	i) Numericals
	3rd	i) Waves
		ii) Types of wave motion
	4th	i) Properties of wave motion
8th	1st	i) Ultrasonics
	2nd	i) Heat
		ii) Specific heat
	3rd	i) Latent heat
		ii) Numericals on heat
	4th	i) Thermal expansion(Examples)
		ii) Expansion coefficients
9th	1st	i) Derivation of expansion coefficients
	2nd	i) Relation between expansion coefficients
	3rd	i) Work and heat
		ii) First law of Thermodynamics.
	4th	i) Numericals
10th	1st	i) Optics
		ii) Reflection & Refraction
	2nd	i) Refractive index
		ii) Numericals
	3rd	i) Critical angle & Total Internal Reflection
	4th	i) Refraction through Prism
		ii) Fiber optics
	1st	i) Electrostatics
		ii) Coulombs laws
		i) Electric potential

11th	2nd	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	Kirchhoff's law
	4th	i) Numericals
14th	1st	i) Application of Kirchhoff's law
		ii) Balanced condition of wheatstone bridge
	2nd	i) Electromagnetism
		ii) Force on a conductor in a uniform magnetic field
	3rd	i) Fleming's left hand rule
		ii) Electro magnetic Induction
		iii) Comparison between Electromagnetism and Electromagnetic Induction
	4th	i) Faraday's laws of Electromagnetic Induction
15th	1st	i) Fleming's right hand rule
		ii) Lenz's law , Simple numericals
		iii) Comparison between Fleming's left hand and right hand rule
	2nd	i) LASER(Spontaneous and stimulated emission)
	3rd	i) Principle,properties and application of LASER
	4th	i) Wireless Transmission

Extra one week will be required to complete the syllabus

Signature of Faculty