Sl. No.

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH

LESSON PLAN

Session-2022-2023

Discipline: Civil/Mechanical Engg. Semester: 2nd

Subject: Engg. Physics

Name of the Teaching Faculty: Dr. Niranjan Panda

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH

LESSON PLAN

Discipline: Sec- A, B, C, D, E Engg. Semester: 1st & 2nd

Name of the Teaching Faculty : Dr Niranjan Panda

Subject: Engg. Physics No. Of Days/per week class allotted 04

Semester From Date : _____ To Date : _____ No. Of Weeks : 15

Week	Class Day	Theory /Practical Topics
1	1	Introduction to students in class and revising their 10th science
	2	Dimension and Dimensional formula. Dimension of diff physical quantity.
	3	Checking the correctness of a physical equations.
	4	Units and system of units. ~~and~~ Units of diff quantities.
2	1	Scalar and vector quantity. Types of vector and representation of a vector quantity
	2	Triangle and parallelogram law of vector addition. Numerical of vector addition
	3	Resolution of vectors and Numerical problems.
	4	products of vectors. Dot product and cross product.
3	1	Dot and cross product in terms of rectangular components.
	2	Concept of Rest and Motion. Displacement velocity and acceleration.
	3	Gravity, Gravitation, force and eqn of motion under gravity.
	4	Circular Motion and terms related to circular Motion.
4	1	Relation between linear and angular velocity and acceleration.
	2	projectile motion and Example of projectile Motion.
	3	projectile fired at an angle θ with horizontal and equation related to it.

Niranjan P

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Semester From Date : _____ To Date : _____ No. Of Weeks : 15

Week	Class Day	Theory /Practical Topics
	4	work, defn and formula and numerical related to this.
5	1	Friction. Types of friction
	2	sliding, rolling and limiting friction. Laws of limiting friction.
	3	Co-efficient of friction and numericals related to this.
	4	Methods to reduce friction.
6	1	Gravitation and gravity. Newton's law of gravitation.
	2	Universal law of gravitation and defn of G, unit and value of G.
	3	Acceleration due to gravity.
	4	Mass and weight and relation between g and G.
7	1	Kepler's law of planetary motion & Numericals.
	2	Harmonic Motion and Simple harmonic motion
	3	Expression for displacement, velocity, acc of a particle in SHM.
	4	wave motion and types of wave motion relation between longitudinal & transverse
8	1	Different wave parameter and relation between them.
	2	Relation between velocity, frequency and wave length

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Semester From Date : _____ To Date : _____ No. Of Weeks : 15

Week	Class Day	Theory /Practical Topics
	3	Ultrasonics, properties and application
	4	Concept of Heat and temperature Difference
9	1	Heat and specific heat of a body & Cp and Cv.
	2	Change of state and Latent heat of a body
	3	Thermal expansions & Co-efficient of thermal expansion. α, β, γ
	4	Relation between α, β, γ
10	1	Work and Heat and relation between them. Joule's law,
	2	First law of thermodynamics & Numericals.
	3	Optics, Light, Reflection and Refraction.
	4	Laws of reflection and Laws of refraction
11	1	Refractive index & Numericals. Critical angle, Total internal reflection
	2	Refraction through a Prism ~~concept~~
	3	Concept of Fibre optics, properties & application.
	4	Electrostatics & Electromagnetism.
12	1	Coulomb's law of electrostatics and Unit charge.

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Name of the Teaching Faculty : Dr Niranjan Panda

Subject: Engg. Physics No. Of Days/per week class allotted 04

Semester From Date : _____ To Date : _____ No. Of Weeks : 15

Week	Class Day	Theory /Practical Topics
	2	Electric potential and potential diff permittivity concept.
	3	Electric field intensity, Electric capacitance. Resistance.
	4	Grouping of capacitors & Magnetic properties of a magnet.
13	1	Magnetic field intensity (B), Magnetic field, Magnetic field strength (H)
	2	Magnetic lines of force and Magnetic flux (Φ).
	3	Electric current, concept & Unit
	4	Ohm's law & definition of resistance Unit.
14	1	Grouping of resistance, Numericals.
	2	Kirchoff's law of electric current
	3	Application of Ohm's law & Kirchoff's law. Numericals.
	4	Application in a Balanced wheatstone Bridge.
15	1	Electromagnetism concept & defn.
	2	Force on a current carrying conductor placed in a uniform magnetic field.
	3	Faraday's law of electromagnetic induction.
	4	Lenz's law & Fleming's Right hand Rule.

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Name of the Teaching Faculty : Dr Niranjan Pandda

Subject: Engg. Physics No. Of Days/per week class allotted 04

Semester From Date :_____ To Date :_____ No. Of Weeks : 15

Week	Class Day	Theory /Practical Topics
16	1	Flemingl's Left Hand Rule & relation bet Left & Right Hand rule.
	2	LASER concept & defn
	3	principle of LASER, population Inversion properties of LASER.
	4	Application of LASER & gravi waves.

Niranjan P.P

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