

LESSON PLAN

SUBJECT: ENGG. PHYSICS

BRANCH: COMMON

SEMESTER: 1ST (2022-23)

NAME OF THE FACULTY: ASEEMA BARIK



GOVERNMENT POLYTECHNIC, BHADRAK

[Signature]
23/10/22
HOD, Matp & Sc

[Signature]
Academic Coordinator

[Signature]
Principal
Govt. Polytechnic, Bhadrak

GOVT. POLYTECHNIC, BHADRAK
AT: TENTULIGADIA, VIA: RAHANDIA, DIST: BHADRAK, PIN: 756135
 E-mail: principalgpbhadrak@gmail.com Tel: 9438806922

LESSON PLAN FOR WINTER SEMESTER – 2022
Dept. of Math & Science, Govt. Polytechnic, Bhadrak

Name of the Faculty : ASEEMA BARIK

Course Code: TH-2A

Theory: ENGG. PHY.

Total Periods : 60

Examination: WINTER(2022)

Sem: FIRST

Class Test: 20

End Sem. Exam: 80

Total Mark :100

Class Start : 25.10.2022

Discipline:	Semester: 1 ST (2022)	Name of the Teaching Faculty : Aseema Barik
Subject: Engineering Physics	No. of Days/per week class allotted: 04	Semester from date: 25.10.2022 To Date: 30.01.2022 No. of Weeks: 15
Week	Class Day	Theory/ Topics
1 st	1 st	<ul style="list-style-type: none"> ▪ Brief discussion on geometry and mathematics ▪ Definition of physical quantities, fundamental units, derived units ▪ System of units
	2 nd	<ul style="list-style-type: none"> ▪ Definition of dimension and dimensional formula of physical quantities
	3 rd	<ul style="list-style-type: none"> ▪ Dimensional equation and principle of homogeneity ▪ Checking the dimensional correctness of physical relations
	4 th	<ul style="list-style-type: none"> ▪ Definition and concept of scalar and vector quantities ▪ Representation of vectors and types of vectors
2 nd	1 st	<ul style="list-style-type: none"> ▪ Triangle and parallelogram law of vector addition (graphical method) ▪ Resolution of vectors
	2 nd	<ul style="list-style-type: none"> ▪ Algebraic addition of vectors ▪ Vector multiplication
	3 rd	<ul style="list-style-type: none"> ▪ Concept of rest and motion ▪ Displacement, speed, velocity, acceleration
	4 th	<ul style="list-style-type: none"> ▪ Force, upward motion under gravity
3 rd	1 st	<ul style="list-style-type: none"> ▪ Downward motion under gravity ▪ Circular motion : angular velocity
	2 nd	<ul style="list-style-type: none"> ▪ Angular velocity and angular acceleration ▪ Relation between v, ω and a, α
	3 rd	<ul style="list-style-type: none"> ▪ Numerical on kinematics ▪ Definition and example of projectile
	4 th	<ul style="list-style-type: none"> ▪ Derivation of expression for equation of trajectory, T, H and R ▪ Condition of maximum R

4 th	1 st	<ul style="list-style-type: none"> ▪ Definition of work, its formula and unit ▪ Definition and concept of friction
	2 nd	<ul style="list-style-type: none"> ▪ Static , dynamic and limiting friction
	3 rd	<ul style="list-style-type: none"> ▪ Revision of limiting friction and laws of limiting friction
	4 th	<ul style="list-style-type: none"> ▪ Coefficient of friction and numerical
5 th	1 st	<ul style="list-style-type: none"> ▪ Method to reduce friction ▪ Newton's law of gravitation
	2 nd	<ul style="list-style-type: none"> ▪ Universal gravitational constant and acceleration due to gravity: Definition , concept, unit and dimension
	3 rd	<ul style="list-style-type: none"> ▪ Relation between g and G ▪ Mass and weight
	4 th	<ul style="list-style-type: none"> ▪ Variation of g with altitude and depth ▪ Kepler's law of planetary motion
6 th	1 st	<ul style="list-style-type: none"> ▪ Simple harmonic motion – definition and example ▪ s, v and a in SHM
	2 nd	<ul style="list-style-type: none"> ▪ Revision of SHM and wave motion
	3 rd	<ul style="list-style-type: none"> ▪ Different wave parameters (A ,λ, f, T) ▪ Transverse and longitudinal wave motion
	4 th	<ul style="list-style-type: none"> ▪ Relation between v, f, λ ▪ Definition, properties and application of ultrasonic
7 th	1 st	<ul style="list-style-type: none"> ▪ Question and answer discussion on SHM and wave
	2 nd	<ul style="list-style-type: none"> ▪ Heat and temperature – concept and differences ▪ Units of heat
	3 rd	<ul style="list-style-type: none"> ▪ Specific heat: concept and numerical
	4 th	<ul style="list-style-type: none"> ▪ Change of state and latent heat, numerical
8 th	1 st	<ul style="list-style-type: none"> ▪ Thermal expansion and expansion of solid, Definition of α, β, γ
	2 nd	<ul style="list-style-type: none"> ▪ Relation between α, β, γ
	3 rd	<ul style="list-style-type: none"> ▪ Work and heat, Joule's mechanical equivalent of heat ▪ First law of thermodynamics ▪ Brief discussion of other laws
	4 th	<ul style="list-style-type: none"> ▪ Reflection, Refraction ▪ Laws of reflection and refraction
9 th	1 st	<ul style="list-style-type: none"> ▪ Class test
	2 nd	<ul style="list-style-type: none"> ▪ Refractive index and numerical
	3 rd	<ul style="list-style-type: none"> ▪ Critical angle and total internal reflection, fiber optic
	4 th	<ul style="list-style-type: none"> ▪ Refraction through prism
10 th	1 st	<ul style="list-style-type: none"> ▪ Class test
	2 nd	<ul style="list-style-type: none"> ▪ Electrostatic and Coulomb's law ▪ Absolute and relative permittivity, electric potential and potential difference
	3 rd	<ul style="list-style-type: none"> ▪ Electric field ▪ Capacitance ▪ Series and parallel combination of capacitors
	4 th	<ul style="list-style-type: none"> ▪ Properties of magnet

		<ul style="list-style-type: none"> ▪ Coulomb's law in magnetism
11 th	1 st	<ul style="list-style-type: none"> ▪ Magnetic flux density, magnetic field intensity
	2 nd	<ul style="list-style-type: none"> ▪ Revision on B, H, ϕ and magnetic lines of force ▪ Electric current and Ohm's law
	3 rd	<ul style="list-style-type: none"> ▪ Combination of resistors, Kirchoff's law
	4 th	<ul style="list-style-type: none"> ▪ Application of Kirchoff's law to Wheatstone bridge ▪ Condition of balance
12 th	1 st	<ul style="list-style-type: none"> ▪ Electromagnetism, Biot-Savart Law ▪ Force on a charge placed in a magnetic field
	2 nd	<ul style="list-style-type: none"> ▪ Force acting on a current carrying conductor placed in magnetic field
	3 rd	<ul style="list-style-type: none"> ▪ Fleming's Left Hand rule, Electromagnetic induction ▪ Faraday's law of electromagnetic induction
	4 th	<ul style="list-style-type: none"> ▪ Lenz's law ▪ Fleming's Right Hand Rule ▪ Comparison between FLR and FRR
13 th	1 st	<ul style="list-style-type: none"> ▪ LASER and its properties
	2 nd	<ul style="list-style-type: none"> ▪ Principle of LASER
	3 rd	<ul style="list-style-type: none"> ▪ Application of LASER
	4 th	<ul style="list-style-type: none"> ▪ Wireless transmission – ground waves, sky waves, space waves
14 th	1 st	<ul style="list-style-type: none"> ▪ Important questions and discussion
	2 nd	<ul style="list-style-type: none"> ▪ Important questions and discussion
	3 rd	<ul style="list-style-type: none"> ▪ Important questions and discussion
	4 th	<ul style="list-style-type: none"> ▪ Important questions and discussion
15 th	1 st	<ul style="list-style-type: none"> ▪ Important questions and discussion
	2 nd	<ul style="list-style-type: none"> ▪ Important questions and discussion
	3 rd	<ul style="list-style-type: none"> ▪ Important questions and discussion
	4 th	<ul style="list-style-type: none"> ▪ Important questions and discussion