

LESSON PLAN

SUB: ENGINEERING PHYSICS(THEORY)

BRANCH:- MECHANICAL ENGG. & TEXTILE ENGG.

SEMESTER:1ST

NAME OF FACULTY: ASEEMA BARIK (PTGF-PHYSICS)



**GOVERNMENT POLYTECHNIC,
BHADRAK**

Hod. Math&Sc

Academic Co-ordinator

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 – 2023

Dept. of Math & Science, Govt. Polytechnic, Bhadrak

Course Code: Th-2a
Theory: Engg. Phy.
Total Periods : 60
Examination: Winter(2023)
Sem: 1ST

Class Test: 20
End Sem. Exam: 80
Total Mark :100
Class Start : 16.08.2023

Discipline: <i>Mechanical Tensile</i>	Semester: 1 ST (2023)	Name of the Teaching Faculty : Aseema Barik, PTGF (PHY)
Subject: Engineering Physics	No. of Days/per week class allotted: 04	Semester from date: 16.08.2023 To Date: 11.12.2023 No. of Weeks: 16
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 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

	3 rd	<ul style="list-style-type: none"> ▪ Electric current and Ohm's law ▪ 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 magnet 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
16 th	1 st	<ul style="list-style-type: none"> ▪ Previous year questions practice
	2 nd	<ul style="list-style-type: none"> ▪ Previous year questions practice
	3 rd	<ul style="list-style-type: none"> ▪ Previous year questions practice
	4 th	<ul style="list-style-type: none"> ▪ Previous year questions practice

Arpan
12.2.23
Signature of Faculty

[Signature]
12/02/23
Signature of Sr. Lecturer/ HOD(I/C)

[Signature]
12/02/23
Signature of Academic Co-ordinator
Academic Co-ordinator