LESSON PLAN

SUBJECT: - APPLIED PHYSICS – I

BRANCH: - COMMON (ELECTRICAL & COMP. SC.)

SEMESTER: - 1st (2024-2025)

NAME OF THE FACULTY: - JYOTIRMAYEE DASH

GOVERNMENT POLYTECHNIC, BHADRAK

14-08-24

HOD, Math& Sc

H.O.D. Math & Sc (I/c)

Academic Coordinator

Principal

Govt polytechnic, Bhadrak

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- 2024

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

Name of the Faculty: Jyotirmayee Dash
Course Code: TH-2
Theory: APPLIED. PHY-I
Total Periods: **60**
Examination: WINTER (2024)
Sem: 1st

Internal assessment/Sessional: 30
End Sem. Exam: 70
Total Mark :100
Class Start: 16.08.2024

Discipline: Electrical & Comp. Sc.	**Semester:** 1st(2024)	**Name of the Teaching Faculty: Jyotirmayee Dash**
Subject: APPLIED. PHY-I	**No. of Days/per week class allotted: 04**	**Semester from date: 16.08.2024 To Date: 24.12.2024** **No. of Weeks: 15**

Week	Class Day	Theory/ Topics
1ST	1st	• Definition of physical quantities, fundamental units, derived Units • System of units
	2nd	• Definition of dimension and dimensional formula of physical quantities
	3rd	• Dimensional equation and principle of homogeneity • Checking the dimensional correctness of physical relations
	4th	• Types of measurement & Errors in measurements
2nd	1st	• Representation of vectors and types of vectors
	2nd	• Triangle and parallelogram law of vector addition (graphical method) • Resolution of vectors
	3rd	• Algebraic addition of vectors • Vector multiplication
	4th	• Concept of rest and motion • Displacement, speed, velocity, acceleration • Force, upward motion under gravity
3rd	1st	• Downward motion under gravity • Circular motion: angular velocity

	2nd	• Angular velocity and angular acceleration • Relation between v, ω and a, α
	3rd	• Definition of work, its formula and unit • Definition and concept of friction
	4th	• Static, dynamic and limiting friction
4th	1st	• Revision of limiting friction and laws of limiting friction
	2nd	• Coefficient of friction and numerical
	3rd	• Method to reduce friction
	4th	• Mechanical energy and conservation of mechanical energy
5th	1st	• Power and its units • Power and work relationship
	2nd	• Translational and rotational motion with examples • Definition of torque and angular momentum
	3rd	• Moment of inertia
	4th	• Conservation of angular momentum and its application • Radius of gyration
6th	1st	• Theorem of parallel and perpendicular axes (statement only)
	2nd	• Moment of inertia of the following bodies
	3rd	• **CLASS TEST**
	4th	• Elasticity • Definition of stress and strain
7th	1st	• Hooke's law and modulus of elasticity • Significance of stress - strain curve

	2nd	• Definition of pressure, atmospheric pressure • Definition of Gauge pressure and absolute pressure
	3rd	• Fortin's barometer and its applications • Concept of surface tension
	4th	• Viscosity and coefficient of viscosity • Application of viscosity in hydraulic system
8th	1st	• Concept of fluid motion • Types of flow • Equation of continuity
	2nd	• Bernoulli's theorem and its applications
	3rd	• Heat and temperature - concept and differences • Units of heat
	4th	• Specific heat: concept and numerical • Scales of temperature and their relationship
9th	1st	• Types of thermometers and their uses
	2nd	• Thermal expansion and expansion of solid, Definition of α, β, ɣ
	3rd	• Relation between α, β, ɣ and numerical • Coefficient of thermal conductivity
	4th	• **CLASS TEST**
10th	1st	• Important questions and discussion
	2nd	• Important questions and discussion • Important questions and discussion
	3rd	• **CLASS TEST**
	4th	• **CLASS TEST**

11th	1st	• **CLASS TEST**

	2nd	• Important question and discussion
	3rd	• Short questions discussion
	4th	• **CLASS TEST**
12th	1st	• **CLASS TEST**
	2nd	• **CLASS TEST**
	3rd	• **CLASS TEST**
	4th	• Important question discussion
13th	1st	• Important question discussion
	2nd	• Important question discussion
	3rd	• Important question discussion
	4th	• **CLASS TEST**
14th	1st	• **CLASS TEST**
	2nd	• **CLASS TEST**
	3rd	• **CLASS TEST**
	4th	• Short questions discussion
15th	1st	• Short questions discussion
	2nd	• Short questions discussion
	3rd	• Short questions discussion
	4th	• **CLASS TEST**

14/08/2024.

SIGNATURE OF THE FACULTY: