LESSON PLAN

SUBJECT: - APPLIED PHYSICS – II

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

SEMESTER: - 2ND (2024-2025)

NAME OF THE FACULTY: - JYOTIRMAYEE DASH

GOVERNMENT POLYTECHNIC, BHADRAK

HOD, Math& Sc

Academic Coordinator

Academic Co-ordinator

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 SUMMER SEMESTER- 2025

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

Name of the Faculty: Jyotirmayee Dash
Course Code: TH-2
Theory: APPLIED. PHY-II
Total Periods: 60
Examination: SUMMER (2025)
Sem: 2nd

Internal assessment/Sessional: 30
End Sem. Exam: 70
Total Mark :100
Class Start: 04.02.2025

Discipline: Electrical & Comp. Sc.	**Semester: 2nd (2025)**	**Name of the Teaching Faculty: Jyotirmayee Dash**
Subject: APPLIED. PHY-II	**No. of Days/per week class allotted: 04**	**Semester from date: 04.02.2025 To Date: 17.05.2025** **No. of Weeks: 15**

Week	Class Day	Theory/ Topics
1ST	1st	• Wave motion • Simple harmonic motion
	2nd	• Vibration of cantilever • Free, forced and resonant vibrations with examples
	3rd	• Acoustics of buildings • Echo and Reverberation
	4th	• Coefficient of absorption of sound • Methods to control reverberation time and numericals
2nd	1st	• Discussion on Reflection, Refraction and Refractive index
	2nd	• Image and image formation by mirrors, lens and thin lenses, Lens formula and numericals • Power of Lens and Magnification and Defects
	3rd	• Total Internal reflection (TIR), Simple and compound microscope
	4th	• Astronomical telescope in normal Adjustment • Magnifying power • Resolving power, Uses of microscope and telescope, Optical Projection system

3rd	1st	• **CLASS TEST** • Numerical practice
	2nd	• Introduction about Coulomb's Law
	3rd	• Unit of charge and Electric field
	4th	• Electric lines of force and their properties • Electric flux (ϕ) and Electric Potential (V)
4th	1st	• **CLASS TEST**
	2nd	• Electric Potential difference and Gauss' Law • Applications of Gauss' law
	3rd	• Numerical practice
	4th	• **CLASS TEST**
5th	1st	• Introduction to Current electricity
	2nd	• Electric current and its units • Direct and Alternating current.
	3rd	• Resistance (R) and its units • Specific Resistance (ρ) and Conductance (G)
	4th	• Specific Conductance (κ) • Series and parallel combinations of resistance
6th	1st	• Factors affecting the resistance of wire • Numerical practice
	2nd	• Carbon resistances and color coding • Ohm's Law and its verification • Kirchhoff's laws
	3rd	• Wheatstone bridge and its applications • Heating effect of current and Electric power
	4th	• Electric energy and its units • Numerical Practice

7th	1st	• Día, para and ferromagnetic materials with their properties • Magnetic field and units • Magnetization
	2nd	• **CLASS TEST**
	3rd	• Concept of electromagnetic induction
	4th	• Moving coil galvanometer: Principle, construction and working
8th	1st	• Conversion of a galvanometer into ammeter and voltmeter
	2nd	• Numerical Practice
	3rd	• Energy bands in solids • Types of materials (insulator, semiconductor, conductor)
	4th	• Intrinsic and extrinsic semiconductors and p-n junction • Junction diode and V-I Characteristics
9th	1st	• Types of junction diode • Diode as rectifier
	2nd	• Transistor and Types of Transistors
	3rd	• Photocells • Solar cells
	4th	• CLASS TEST
10th	1st	• Lasers • Types of Lasers • Laser characteristics
	2nd	• Introduction to optical Fibers. • Fiber types • Applications in telecommunication, medical and sensors
	3rd	• CLASS TEST
	4th	• Nanoparticles and nanomaterials • Properties at Nanoscale • Nanotechnology

11th	1st	• Nanotechnology based devices and applications • Nanometer size devices
	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

02/02/2025

SIGNATURE OF THE FACULTY: