SCHEME OF COURSE WORK
B. Tech Semester I & II
APPLIED PHYSICS LAB (20BP1102)
DEPARTMENT OF PHYSICS

Course Details:

Course Title	**APPLIED PHYSICS LAB**								
Course Code	**22BP1102**	**L**	**T**	**P**	**C**	**0**	**0**	**3**	**2**
Program:	**B. Tech.**								
Specialization:	**CSE**								
Semester	**II**								
Prerequisites	**Basics of Physics up to +2 level**								
Courses to which it is a prerequisite	**N/A**								

Course Outcome (COs):

CO1	Interpolate some of physical parameters based on optical phenomena
CO2	Analyse the dielectric behavior of a material
CO3	Identify the characteristics of semiconducting materials
CO4	Estimate the strength of the magnetic field and asses the losses in magnetization
CO5	Demonstrate the mechanical parameters using sensors

PROGRAMME OUTCOMES

PO1: Graduates will be able to apply the knowledge of mathematics, science, engineering fundamentals and principles of Computer Science & Engineering to solve complex problems in different domains.

PO2: Graduates can identify, formulate, study contemporary domain literature and analyze real life problems and make effective conclusions using the basic principles of science and engineering.

PO3: Graduates will be in a position to design solutions for Engineering problems requiring in depth knowledge of Computer Science and design system components and processes as per standards with emphasis on privacy, security, public health and safety.

PO4: Graduates will be able to conduct experiments, perform analysis and interpret data as per the prevailing research methods and to provide valid conclusions.

PO5: Graduates will be able to select and apply appropriate techniques and use modern software design and development tools. They will be able to predict and model complex engineering activities with the awareness of the practical limitations.

PO6: Graduates will be able to carry out their professional practice in Computer Science & Engineering by appropriately considering and weighing the issues related to society and culture and the consequent responsibilities.

PO7: Graduates would understand the impact of the professional engineering solutions on environmental safety and legal issues

PO8: Graduates will transform into responsible citizens by adhering to professional ethics. PO8: Graduates will transform into responsible citizens by adhering to professional ethics.

PO9: Graduates will be able to function effectively in a large team of multidisciplinary streams consisting of persons of diverse cultures without forgetting the significance of each individual's contribution.

PO10: Graduates will be able to communicate effectively about complex engineering activities with the engineering community as well as the general society, and will be able to prepare reports.

PO11: Graduates will be able to demonstrate knowledge and understanding of the engineering and management principles and apply the same while managing projects in multidisciplinary environments.

PO12: Graduates will engage themselves in self and life-long learning in the context of rapid technological changes happening in Computer Science and other domains.

Course Outcome versus **Program Outcomes for CSE:**

COs:	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	3	2	-	2	-	-	-	-	1	**1**	1	-
2	**3**	**2**	-	**2**	-	-	-	-	1	**1**	**1**	-
3	**3**	**2**	-	**2**	-	-	-	-	1	**1**	1	-
4	3	2	-	2	-	-	-	-	1	**1**	1	-
5	3	2	-	2	-	-	-	-	1	1	1	1

3 – Substantial (High), 2 – Moderate (Medium), 1- Slight (Low) '-' – No correlation

SCHEME OF COURSE WORK
Subject- APPLIED PHYSICS LAB

Academic Year-2021-22
Teaching-Learning and Evaluation

Week	TOPIC / CONTENTS	Course Outcomes	Sample questions	Teaching Learning Strategy	Assessment Method & Schedule
1	Determination of wavelengths of spectral lines using Diffraction grating-minimum deviation method	**CO-1**	1) what is diffraction 2)what is spectrum 3) what is the wavelength range of visible radiation 4)what is meant by minimum deviation method	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 1)
2	Determination of radius of curvature using Newton's rings	**CO-1**	1) what is interference 2) what is radius of curvature 3) how do you estimate refractive index of a liquid using Newton's rings 4) why fringes are circular 5) why central fringe is dark	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 2)
3	Determination of particle size using laser diffraction	**CO-1**	1) what is diffraction 2) why the fringes are circular	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 3)
4	Determination of wavelength using laser diffraction	**CO-1**	1) what is a LASER 2) why the fringes are spots 3) why the intensity of spots decreasing with higher orders	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 4)

5	Determination of coercevity and retintivity and energy loss using B-H curve	**CO-4**	1) What is meant by coercevity and retintivity 2)What is energy loss 3) what is hysteresis loss	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 5)
6	Measurement of strain using strain guage sensor	**CO-5**	1) what is strain 2) what is young's modulus 3) what is poisson's ratio	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 6)
7	**Internal Lab exam - 1**	**-**	-	-	Assessment -2 (Week – 7)
8	Study of variation of magnetic field intensity along the axis of a circular current carrying coil	**CO-4**	1) what is magnetic meredian position 2) What is Biot-Savart law 3) what is the analogous of this experiment in the atomic level	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 8)
9	Determination of resistivity of a Ge crystal	**CO-3**	1) what is resistivity 2) what is a semiconductor 3) On what factors resistivity depends	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 9)
10	Estimation of band gap of a semiconductor	**CO-3**	1) what is energy gap 2) what type of crystal Ge is 3) what is meant by intrinsic semiconductor	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 10)
11	Determination of dielectric constant	**CO-2**	1) What is meant by dielectric constant 2) what are the applications of this experiment	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 11)
12	Determination of energy band gap of a semiconductor	**CO-3**	1) what is a p-n junction diode 2) where do we use it 3) what is energy band gap	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 12)
13	Determination of temperature co-efficient of resistance	**CO-3**	1) what is temperature co-efficient of a resistance 2) where do we use thermister 3) Which materials is used to prepare a thermister	Live Demonstration and hands on experience	Day to day analysis and record valuation (Week 13)
14	**Internal Lab exam - II**	-	-	-	Assessment -2 (Week -14)

	Preparation and End Semester Practical Examination		

Assessment Methods:	Day to Day analysis/Internal Lab exams/ End Exam