Semester 5 Minor

Course- 355P

Minor Course – 4 Credits

Semester: 5	**Course No.: 355(P)**	**Course Code:** PHE 355(P) **Course Title:** Physics lab
Credits: 4	1 Session = 2 hour	**Course Category: Minor Paper**

The course objectives for computational, mechanics, magnetism, optics and electronics practical in physics generally focus on developing practical skills in measurement, experimentation, and understanding of fundamental concepts in difference branches of physics.

Key objectives include:

Understanding and applying principles of mechanics through hands-on experiments such as measuring physical quantities and verifying theoretical laws.

Gaining proficiency with electronic experiments, understand how to connect basic electronic circuits including diodes and UJT.

Developing the ability to interpret experimental data, analyze errors, and relate practical observations to theoretical physics concepts.

Learning to operate and maintain physics laboratory equipment used in experiments.

Course Outcomes:

On successful completion of the course, learners will be able to.

CO	COURSE OUTCOME	BLOOMS VERB
CO1	Set up the instruments as per the instructions, Connect the circuit as given in the circuit diagram.	**Remember Understand**
CO2	Develop measurements techniques, record observations, use the given formula, do calculations and draw your conclusion from the result..	**Understand Apply**
CO3	Find uncertainty involved in the observations	**Evaluate**
CO4	Analyse the observations for scientific inference	**Analyse**

	GROUP-A	**60 Hours**
	1. Y-by Koening's method. 2. Study of Phase Transitions and Interpretation of Cooling Curves of paraffin. 3. To study the Lissajous figure using graphical method. 4. Determine the value of acceleration due to gravity using Bar pendulum. 5. To determine force constant (k) of a spring. 6. Cauchy constant. 7. Least square method 8. Analysis of elliptical polarized light using photocell 9. Vibrational magnetometer 10. Analysis of error.	
	GROUP B	**60 Hours**
	1. Owen's Bridge : Find the value of an inductance of an unknown inductor 2. Study of electron diffraction pattern 3. Study of Bridge rectifier circuit with filter. 4. To Study Characteristics of Solar cell 5. Zener diode as a voltage regulator. 6. To study the variation of Ic and Vce with temperature in fixed bias circuit and collector to base bias circuit for CE configuration. 7. To study half adder and full adder using AND gate and EX-OR gate. 8. UJT Characteristics 9 Study of half wave and full wave voltage doubler circuit and find the voltage regulation for it 10 To find the Dielectric constant of the given material.	

Suggested Text Books:

1. Sc. Practical Physics by C. L. Arora, 20th Edition, 2020 S. Chand and Company
2. Practical Physics by G. L. Squires. 4th edition, Cambridge, 2001.
3. Practical Physics with viva – voce Dr. S. L. Gupta and Dr. V. Kumar, 22nd edition, 1997 Pragati Prakashan