

**Semester 2**  
**Multidisciplinary Course-124P**  
**(Compulsory Course – 2 Credits)**

<b>Semester: 2</b>	<b>Course No.: 124 (P)</b>	<b>Course Code:</b> PHMDC 124(P) <b>Course Title:</b> : Physics lab
<b>Credits: 2</b>		<b>Course Category:</b> Multidisciplinary

**Course Outcomes: On successful completion of the course the learner will be able to**

CO#	COGNITIVE ABILITIES	COURSE OUTCOMES
CO111 T-1	REMEMBERING	Get acquainted and learn the use of different laboratory instruments
CO111 T-2	UNDERSTANDING	Understanding of the principals involved in Astronomy, general physics, optics and electronics will become clear .
CO111 T-3	APPLYING	Using calculations and experimentally measured data different physical quantities related to general physics and electronics will be obtained and Astronomical Charts will be prepared.
CO111 T-4	ANALYSING	.
CO101.5	EVALUATING	

Unit No.	Unit Contents	Sessions Allotted
<b>1</b>	<p style="text-align: center;"><b>GROUP: A</b></p> <p>1. (a) Draw the diagram of Zodiac and Rasis</p> <p>(b) Nakshtras and their range of Nirayan longitudes (Ch-4 Rasi and Nakshatra Systems , Indian astronomy: An introduction , S. Balachandra Rao,. Distributed by Orient Longman Ltd, 1<sup>st</sup> edition, 2000. )</p> <p>2. Least Square Method</p> <p>3. Study of mass-spring system and find the force constant k</p> <p>4. Flywheel-To find the moment of inertia</p> <p>5. Study of probability distribution for two option system (coins)</p> <p>6. Vibration magnetometer</p> <p>Compare the magnetic moments of two bar magnets.</p>	<b>30</b>

2	<p style="text-align: center;"><b>GROUP: B</b></p> <p>1. Full-wave Rectifier</p> <p>Obtain load characteristic and % regulation of Full-wave rectifier without filter and with capacitor filter. Determine ripple factor also.</p> <p>2. Bridge Rectifier</p> <p>Obtain load characteristic and regulation for Bridge rectifier without using filter circuit and by using capacitor filter circuit. Obtain ripple factor without filter circuit.</p> <p>3. Voltage Doubler</p> <p>4. I-V Diode characteristics of a PN-junction diode and its load line analysis.</p> <p>5. Parallel Resonance</p> <p>To determine the frequency of a.c. emf by series resonance circuit by varying capacitor.</p> <p>6. Universal Logic Gates NAND, NOR (Using discrete components)</p> <p>Verification of truth tables and giving understanding of voltage level for '0' and '1' level.</p>	30
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**Reference books:**

1. B. Sc. Practical Physics by C. L. Arora , 20<sup>th</sup> Edition , 2020 S. Chand and Company
2. Practical Physics by G. L. Squires. 4<sup>th</sup> edition , Cambridge , 2001.
3. . Practical Physics with viva – voce Dr.S.L. Gupta and Dr.V.Kumar , 27<sup>th</sup> edition , 20210 Pragati Prakashan