PARVATHANENI BRAHMAYYA
SIDDHARTHA COLLEGE OF ARTS & SCIENCE
Autonomous
Siddhartha Nagar, Vijayawada–520010
Re-accredited at 'A+' by the NAAC

23PHMIP121: MECHANICS, WAVES AND OSCILLATIONS

Offered to: All UG Programs **Semester – II**

Max. Marks: 50 (CIA: 15 + SEE: 30) **30Hrs** **Credits: 01**

COURSE OBJECTIVE:

To develop practical skills in the use of laboratory equipment and experimental techniques for measuring properties of matter and analyzing mechanical systems

Course outcomes: On successful completion of this course, the students will be able to:

CO 1 Understand the use of vernier calipers, screw gauge, and traveling microscopes.
CO 2 Learn the concept of Moment of Inertia.
CO 3 Understand the usage of basic laws and theories to determine various properties of the materials given.
CO 4 Verify the laws of transverse vibrations in a stretched string using a sonometer
CO 5 Interpret the difference between theoretical and experimental values.

CO-PO MATRIX								
23PHMIP 121	**CO-PO**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
	CO1							2
	CO2						2	
	CO3						2	
	CO4							2
	CO5						3	

List of Experiments

1. Young's modulus of the material of a bar (scale) by uniform bending
2. Young's modulus of the material a bar (scale) by non- uniform bending
3. Surface tension of a liquid by capillary rise method
4. Viscosity of liquid by the flow method (Poiseuille's method)
5. Bifilar suspension –Moment of inertia of a regular rectangular body.
6. Rigidity modulus of material of a wire-Dynamic method (Torsional pendulum)
7. Volume resonator experiment
8. Determination of 'g' by compound/bar pendulum
9. Simple pendulum- normal distribution of errors-estimation of time period and the error of the mean by statistical analysis
10. Verification of laws of vibrations of stretched string –Sonometer
11. Study of a damped oscillation using the torsional pendulum immersed in liquid-decay constant and damping correction of the amplitude

Evaluation Procedure:

The marks distribution for the Semester End practical examination is as follows:

(A) External Lab Evaluation

Formula/ Principle / Statement with an explanation of symbols	05
Diagram/Circuit Diagram / Tabular Columns	05
Setting up of the experiment and taking readings/Observations	10
Calculations (explicitly shown) + Graph + Result with Units	05
Procedure and Precautions	04
Result	01
Viva-voce	05
(B) Continuous Assessment (Internal)	15
Total Marks:(A+B)	50