



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

23PHMDL101: PRINCIPLES OF PHYSICAL SCIENCES

Offered to : ALL UG PROGRAMS

Semester: II

30Hrs

Course Type: Theory-Core

Credits: 2

Year of Introduction: 2023-24

Course outcomes:

Upon completion of the course "Principles of Physical Sciences for Arts Students," students from arts backgrounds will be able to:

CO 1. Understand the foundational principles of physical sciences: Students will develop a comprehensive understanding of the core principles and concepts in physical sciences.

CO 2. Analyse and interpret scientific information: Students will acquire the ability to critically analyse scientific information and data related to physical sciences.

CO 3. Apply physical science principles to real-world scenarios: Students will develop the skills to apply physical science principles to solve real-world problems and scenarios.

CO 4. Learn the basic fundamentals of Physics and apply in daily life

CO 5. Observe the concept of Light

CO-PO MATRIX								
	CO-PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
23PHMDL 101	CO1							2
	CO2					2		
	CO3						2	
	CO4							2
	CO5						2	

Syllabus:

Unit 1: Introduction to Physics

Nature of Physics: Overview of physics as a discipline, its scope, and its relationship to other sciences. Scientific Measurement and Units: Understanding the principles of measurement, SI units, and the importance of accurate and precise measurements. Scalars and Vectors: Differentiating between scalars and vectors, understanding vector addition and subtraction.

Unit 2: Mechanics for Arts Students

Motion and Forces: Introduction to the principles of motion, including velocity, acceleration, and the laws of motion. Energy and Work: Understanding the concept of energy, different forms of energy (K.E & P.E), and the relationship between work and energy. Circular Motion: Exploring the principles of circular motion, centripetal force, and applications in real-world scenarios. Gravity: Introduction to the concept of gravity, Newton's law of universal gravitation, and its implications.

Unit 3: Waves and Optics for Arts Students

Waves: Understanding the properties and characteristics of waves, including wave types, wave motion, and wave interference. Sound Waves: Exploring the nature of sound waves, including properties of sound, sound propagation, and the Doppler effect. Light and Optics: Introduction to the behaviour of light, reflection, refraction, and the formation of images by mirrors and lenses. Wave Optics: Understanding the principles of interference, diffraction, and polarization of light waves.

Books:

1. "Principles of Physics" by David Halliday, Robert Resnick, and Jearl Walker

Reference Books

"University Physics" by Hugh D. Young and Roger A. Freedman



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Model Question Paper

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Section-A

Answer any THREE of the following questions

3x5 = 15M

1. Define Physics? Explain the Scope of Physics.
2. Explain Scaler and vector quantities. Give examples.
3. Define Energy. Explain various forms of energies.
4. Explain Newton's Law of Universal gravitational constant.
5. What is a wave? Explain various properties of waves.

Section-B

Answer any THREE of the following questions

2x10= 20M

6. How is Physics related to other branches of Sciences.
7. State Newton's Laws of Physics. Give Examples.
8. State and explain Doppler effect. Write any four applications.
