Department of Physics

Discipline Specific Minor Course

(Semester-II)

Year	Semester	Course Type	Course Code	Course Title	Theory/ Practical	Credits	No. of Lectures/ Practical to be conducted	Page No.
1st	II	**DSC (Minor)**	PH-MN-126T	Fundamentals of Physics	Theory	2	30L	**2-3**

DISCIPLINE SPECIFIC MINOR COURSE (PH-MN-126T):
Fundamentals of Physics

Course Code & Title	Credits	Credit Distribution of the Course	
		Theory	Practical
PH-MN-126T - Fundamentals of Physics	2	2	--

❖ LEARNING OBJECTIVES:

The learning objectives of this course are as follows:

1. To understand the role of physics in everyday life.
2. To identify examples of physics in everyday life.
3. To explain how physics principles are applied in everyday devices and technology.

❖ COURSE OUTCOMES:

On successful completion of this course students should be able to do the following:

CO1. Identify common examples of physics in everyday life.
CO2. Explain how physics principles are applied in everyday devices and technology.
CO3. Demonstrate an understanding of the role of physics in everyday life.

SYLLABUS OF PH-MN-126T: Fundamentals of Physics [30 Hours]

Unit I: Motion [08 Hours]

1.1 Motion: Velocity, acceleration, momentum – inertia - force - laws of motion. Newton's law of gravitation - acceleration due to gravity- mass and weight, weightlessness.

Unit II: Electricity and Magnetism [14 Hours]

2.1 Electricity: Voltage and current, Ohms law. Electric power (EB Bill), calculation of energy requirement of electric appliances – transformer, generator.

2.2 Magnetism: Magnetization and magnetic intensity, Types of magnetic materials, Properties of magnetic material, Curie temperature, superconductivity.

Unit III: Our Universe and Artificial Satellites [08 Hours]

3.1 Our Universe: Galaxies- Stars, Planets & satellites – solar system.

❖ ESSENTIAL/RECOMMENDED READINGS:

1. Elements of Properties of Matter, D.S Mathur, S .Chand & Co. (2010).

2. Fundamentals of Physics with Applications by Arthur Beiser
3. Optics by Ajay Ghatak, Tata McGraw-Hill publishing Co. Ltd., New Delhi (1998).
4. Electricity and Magnetism,A S Mahajan, A ARangwala, McGraw Hill, NewDelhi (2017).
5. An Introduction to Astrophysics, Baidyanath Basu, Tanuka Chattopadhyay, sudhindra
6. Nath Biswas, Second Edition (2010), PHI Learning Private Limited.