Course Code	Course Name	Credits
26PH914	PHYSICS IN EVERYDAY LIFE	04

Course Objectives

- To introduce basic concepts of physics of life from universe, units and measurements with errors, lights, motion, electricity, matter and energy for day-to-day life and applications.

Learning Outcomes

Upon successful completion of this course it is intended that a student will be able to:

- Physics in everyday life Physics or the study of basic concepts with universe and units, matter, energy, and the interactions between them, helps us to understand the laws and rules that govern the physical world. Beyond the scope of advertising and education, animation is used in plotting ideas, developing plans and helping predict outcomes in daily life. In physics education and study their influence on students learning abilities.

Unit 1 - Universe, Units, Dimensions and Errors (12 Hrs.)

Planets, – solar system, moon- faces of moon, lunar and solar eclipses, constellations, Different types of stars, Galaxies, black hole. Satellites, Artificial satellites, Global positioning system. Geo stationary satellite.

Fundamental and derived quantities: Units and dimensions, dimensional analysis, order of magnitude, significant figures, errors.

Unit 2 – Light (12 Hrs.)

Reflection, refraction, diffraction, interference, scattering (elementary ideas only) – examples from daily life – apparent depth, blue color of sky, twinkling of stars.

Total internal reflection, mirage, sparkling of diamond, primary and secondary rainbow –Concave and convex lenses – focal length, power of a lens, refractive index, prism, dispersion. Human eye, defects of the eye – myopia, hypermetropia, presbyopia and astigmatism and their correction by lens.

Unit 3 – Motion (12 Hrs.)

Velocity, acceleration, momentum, Idea of inertia, force - laws of motion. Newton's law of gravitation, acceleration due to gravity, mass and weight, apparent weight, weightlessness.

Rotational motion, Moment of inertia, torque, centripetal and centrifugal acceleration examples- banking of curves, roller coasters.

Unit 4 – Electricity (12 Hrs.)

Voltage and current, ohms law. Electric energy, electric power, calculation of energy requirement of electric appliances – transformer, generator, hydroelectric power generation – wind power – solar power – nuclear power.

Unit 5 – Matter and Energy (12 Hrs.)

Different phases of matter, fluids - surface tension, viscosity- capillary rise, Bernoulli's theorem and applications. Heat energy, temperature, different temperature scales – degree Celsius, Fahrenheit and Kelvin. Waves – transverse and longitudinal waves, sound waves, Doppler Effect. Electromagnetic waves – applications – microwave oven, radar, super conductivity.

Reference Books:

1. Fundamentals of Physics with Applications by Arthur Beiser
2. Conceptual Physics by Paul G Hewitt
3. University Physics by F. W. Sears, M. Zemansky, R. A. Freedman, and H. D. Young, Pearson Education
4. Fundamentals of Physics by D. Halliday, R. Resnick, J. Walker, John Wiley & Sons
5. D.S. Mathur, Elements of properties of matter and acoustics, S. Chand & Company Ltd.,New Delhi(2010)
6. R.Murugeshan, Properties of matter and acoustics, S. Chand & Co, New Delhi(2012)
7. R. Murugeshan, Electricity, S. Chand & Co, New Delhi (2010)

Websites and eLearning Sources:

1. https://youtu.be/K4u5S76OYR4?si=y3lkDBBaIouZBicV
2. https://youtu.be/l2yuDvwYq5g?si=fPk0op6CS5BE2zEI
3. https://youtu.be/ON1QGqB6vxg?si=ufwg8sJFZM19b8UB

COs and Bloom's Taxonomy Mapping – 26PH914		
Course Outcomes	**On successful completion of this course, students will be able to**	**BTL**
CO1	Recall and explain core concepts and principles	K1, K2
CO2	Apply subject knowledge to practical problems	K3
CO3	Analyze systems and interpret results	K4
CO4	Evaluate performance and applications	K5
CO5	Design systems or models for real-world applications	K6

BTL (Bloom's Taxonomy Level) - K1 – Remembering, K2 – Understanding, K3- Applying, K4 – Analyse, K5- Evaluate and K6 - Create

Relationship Matrix – 26PH914													
Course Outcomes	**Programme Outcomes (POs)**						**Programme Specific Outcomes (PSOs)**						**Mean Score of Cos**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	**PSO6**	
CO1	3	2	1	1	1	2	3	2	1	2	1	1	1.67
CO2	3	3	2	1	1	2	2	2	2	2	1	1	1.92
CO3	3	3	3	2	2	2	2	3	3	2	2	1	2.33
CO4	2	2	2	2	2	2	2	2	2	3	2	2	2.17
CO5	2	2	3	3	2	2	2	2	3	3	2	2	2.33
												Total	2.08

Mean Score: 3- High, 2- Medium/Moderate, 1-Low