Lecture Plan

Name of the College: Government College of Arts, Science and Commerce. Sanquelim - Goa

Name of Faculty: Vidhita Parab	**Subject:** Physics	
Paper code: PHY111	**Program: F.Y.B.Sc**	**Division:**
Academic year: 2024-25	**Semester: I**	**Total Lectures: 60**

Course Objectives: To understand the basics of Physics and learn the applications of it.

Course Outcome: Student will be able to

1. Recall fundamental concepts in Physics and connect them in everyday life

2. Describe the fundamental concept to understand the physical phenomena happening around us.

3. Apply fundamental concepts in Physics to analyse these phenomena.

4. Correlate the concepts of Physics in other branches of science.

Student Learning Outcome: Able to understand the physics used to everyday Life and will be able to apply .

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books

June- july	28-06-2024	06-07-2024	5	Newton's first law of Inertia, Net Force, the equilibrium rule, speed, velocity			1. P. G. Hewitt, Conceptual physics, 12th ed., Pearson, 2015. Other reference Books 2. G. Venkataraman, Why are things the way they are? University Physics, 2017. 3. Jerry D. Wilson Physics a practical and conceptual approach, Second edition, Saunders college publications, 1986.
				Acceleration, how fast, friction, Mass and weight, Newtons second law of motion			
				when acceleration is g, when acceleration is less than g, Forces and interaction			
				Newtons third law of motion, Momentum, Impulse,			
				Bouncing, conservation of momentum, collisions,			
	08-07-2024	13-07-2024		work, Power, Potential			1. P. G. Hewitt, Conceptual physics, 12th ed., Pearson, 2015. Other reference Books 2. G. Venkataraman, Why are things the way they are? University Physics, 2017.
			4	Circular Motion, Rotational inertia			
				Torque, Center of mass and center of gravity			
				Centripetal force, centripetal force			
	15-07-2024	20-07-2024		centrifugal force, Angular Momentum			
			4	conservation of			

				angular momentum.			3. Jerry D. Wilson Physics a practical and conceptual approach, Second edition, Saunders college publications, 1986.
				The universal law of gravity			
				the universal gravitational constant, Inverse square law,			
	22-07-2024	27-07-2024	4	weight and weightlessness			
				ocean tides			
				black holes			1. P. G. Hewitt, Conceptual physics, 12th ed., Pearson, 2015. Other reference Books 2. G. Venkataraman, Why are things the way they are? University Physics, 2017. 3. Jerry D. Wilson Physics a practical and conceptual approach, Second edition, Saunders college publications, 1986. . P. G. Hewitt, Conceptual physics,
				Solids: Density, Elasticity, tension			
August	29-07-2024	03-08-2024	3	compression, Scaling.			
				Liquids: Pressure, Buoyancy, Flotation			
				Archimedes principle, what makes object sink and float,			
				Surface tension, Capillarity, Gases: The Atmosphere			
	05-08-2024	10-08-2024	4	atmospheric pressure, Barometers, Bernoulli’s Principal, Plasma.			
				Temperature, heat,			
				specific heat Capacity, Thermal Expansion			
				Heat Transfer: Conduction			

	12-08-2024	17-08-2024	4	Convection and Radiation			12th ed., Pearson, 2015. Other reference Books 2. G. Venkataraman, Why are things the way they are? University Physics, 2017. 3. Jerry D. Wilson Physics a practical and conceptual approach, Second edition, Saunders college publications, 1986.
				Newtons law of cooling			
				Wave motion, wave speed			
				wave interference, Doppler Effect			
	19-08-2024	24-08-2024	4	Sound in air, forced vibrations			
				resonance, interference			
				Beats, Music			
				Pitch,			
	26-08-2024	31-08-2024	4	Sound intensity, Musical Instruments.			
				Electricity: electric charges, Coulomb's law Conductors and Insulators,			
				electric field, electric energy storage			
				voltage sources, electrical Resistance,			. P. G. Hewitt, Conceptual physics, 12th ed., Pearson, 2015. Other reference Books 2. G. Venkataraman,
September	02-09-2024	05-09-2024	4	direct and alternating current Electric power, Lamps.			
				Magnetism: Magnetic poles, magnetic fields,			
				Electric current			

				and magnetic field, Electromagnets			Why are things the way they are? University Physics, 2017. 3. Jerry D. Wilson Physics a practical and conceptual approach, Second edition, Saunders college publications, 1986. . P. G. Hewitt, Conceptual physics, 12th ed., Pearson, 2015. Other reference Books 2. G. Venkataraman, Why are things the way they are? University Physics, 2017. 3. Jerry D. Wilson Physics a practical and conceptual approach, Second edition, Saunders college publications,
	13-09-2024	14-09-2024	1	Faraday's law, Electric Motors, Electric Generators			
	16-09-2024	21-09-2024	4	Power Production, Transformers			
				Electromagnetic wave, Electromagnetic spectrum, transparent materials			
				opaque materials, shadows, Seeing Light, colour			
				selective reflection, selective transmission, mixing coloured light			
	23-09-2024	28-09-2024	4	natural phenomenon like why sky is blue? Why Sunsets Are Red? Why Clouds Are White? Why Water Is Greenish Blue?			
				Reflection, Refraction, Dispersion			
				Rainbows, total internal reflection			
				Lenses and Mirrors			
October	30-09-2024	05-10-2024	4	Quantization of energy, wave particle duality,			

				complementarity,			1986.
				predictability and chaos. Bohr Model of the atom,			
				concept of electron waves, Schrodinger's wave equation.			. P. G. Hewitt, Conceptual physics, 12th ed., Pearson, 2015. Other reference Books 2. G. Venkataraman, Why are things the way they are? University Physics, 2017. 3. Jerry D. Wilson Physics a practical and conceptual approach, Second edition, Saunders college publications, 1986.
	07-10-2024	12-10-2024	4	X-ray and radioactivity			
				alpha, beta and gamma rays, environmental radiation,			
				doses of radiation, radioactive traces, The atomic nucleus			
				the strong force, transmutation of elements			
	14-10-2024	22-10-2024	6	radioactive half-life.			
				revision			
				Revision			
				revision			
				revision			
				revision			

Assessment Rubrics

Component	Max Marks
ISA 1	10
ISA 2	10

Practical	
Project	
Semester End Exam	80