

B.Sc. I SEM**Course Outcomes: DSC1-PHY104T: Mechanics****Credits: 04**

Course Outcomes (COs)	PO/PSO'S	Cognitive level
CO-1: Learn fixing units, tabulation of observations, analysis of data (graphical/analytical)	PO4, PO8, PO11, PSO1	K1
CO-2: Will learn about accuracy of measurement and sources of errors, importance of significant figures	PO1, PO3	K1
CO-3: Will know how g can be determined experimentally and derive satisfaction.	PO4, PO7	K2
CO-4: Will see the difference between simple and tentional Pendulum and their use in the determination of various physical parameters.	PO4, PO5, PO8, PSO5	K4
CO-5: Will come to know how various elastic moduli can be determined	PO3, PO5	K2
CO-6: Will measure surface tension and viscosity and appreciate the methods adopted.	PO6, PO8, PO9, PSO2	K4
CO-7: Will get hands on experience of different equipment	PO1, PO2, PO4	K4

Course Outcomes: DSC1-PHY104P: Mechanics**Credits: 02**

Course Outcomes (COs)	PO/PSO'S	Cognitive level
CO-1: Learn basics of the kinematics and dynamics linear and rotational motion	PO1, PSO1	K1
CO-2: Acquire basic knowledge of oscillation.	PO1, PSO1	
CO-3: Understand the principles of elasticity through the study of Young Modulus and modulus of rigidity.	PO3, PO7, PSO3	K2
CO-4: Student shall perform experiments related to mechanics (compound pendulum), rotational dynamics (Flywheel) etc	PO5, PSO2	K4
CO-5: Will measure surface tension and viscosity and appreciate the methods adopted.	PO6, PO8, PO9, PSO2	K3
CO-6: Will get hands on experience of different equipment	PO1, PO2, PO4	K4

B.Sc. II sem**Course Outcomes: DSC 2A-PHY204T: Electricity and Magnetism****Credits:04**

Course Outcomes (COs)	PO/PSO'S	Cognitive level
CO-1: Demonstrate Gauss law, Coulomb's Law for the electric Field and apply it to system of point charges as well as line, surface and volume distribution of charges.	PO1, PO3, PSO1	K3
CO-2: Explain and differentiate the vector (electric field. Coulombs law and scalar formalisms of electrostatics.	PO5,PO7	K4
CO-3: Describe the magnetic field produced by magnetic dipoles and electric currents.	PO3, PO7	K2
CO-4: Describe how magnetic field produced by magnetic dipoles and electric current.	PO5, PO8, PSO5	K5
CO-5: Explain faradays-Lenz & Maxwell laws to articulate the relationship between electric & magnetic fields.	PO8	K2
CO-6: Apply Kirchoff's rules to analyze AC circuits consisting of parallel & series combinations of voltage sources and resistors & describe the graphical relationship of R,C & L	PO4, PO11, PSO2	K3

Course Outcomes: DSC 2A-PHY204P: Electricity and Magnetism**Credits:02**

Course Outcomes (COs)	PO/PSO'S	Cognitive level
CO-1: Apply various network theorems such as Superposition, Thevenin, Norton, Reciprocity, Maximum Power Transfer, etc. and their applications in electronics, electrical circuit analysis, and electrical machines.	PO1,PSO3	K3
CO-2: Student will get an opportunity to verify various laws in electricity and magnetism such as Lenz's law, Faraday's law	PO3,PSO5	K4
CO-3: Will be able to verify of various circuit laws, network theorems , using simple electric circuits.	PO3,PO11	K4
CO-4: Apply Kirchoff's rules to analyze AC circuits consisting of parallel and/or series	PO2,PO8	K3

combinations of voltage sources and resistors and to describe the graphical relationship of gain and voltage.		
CO-5: Understand the working of charging and discharging of capacitor using simple circuit.	PO2,PO8,PSO 2	K2

B.Sc. III sem**Course Outcomes: DSC3-PHY303T: Thermal Physics and Statistical mechanics****Credits:04**

Outcomes Statement (COs)	PO/PSO'S	Cognitive level
CO-1: Apply the laws of thermodynamics and analyze the thermal system.	PO1,PSO1	K3
CO-2: Apply the laws of kinetic theory and radiation laws to the ideal and practical thermodynamics systems through derived thermodynamic relations.	PO3,PO4	K3
CO-3: Have a knowledge of the real gas equations, Van der Waal equation of state, the Joule Thompson effect.	PO7,PO3	K2
CO-4: Learn about the black body radiations, Stefan- Boltzmann's law, Rayleigh-Jean's law and Planck's law and their significances.	PO3,PSO2	K4
CO-5: Learn the quantum statistical distributions, viz., the Bose-Einstein statistics and the Fermi-Dirac statistics.	PO2, PO5, PSO3	K4

Course Outcomes: DSC3-PHY303P: Thermal Physics and Statistical mechanics**Credits:02**

Outcomes Statement (COs)	PO/PSO'S	Cognitive level
CO-1: Understand various thermo dynamical concepts, principles.	PO1,PSO2	K2
CO-2: The students are expected to do some basic experiments in thermal Physics, determinations of coefficient of thermal conductivity, temperature coefficient of resistant, variation of thermo-emf of a thermocouple with temperature difference at its two junctions and calibration of a thermocouple.	PO3, PO5, PO7, PSO3	K4

CO-3: Learn about the black body radiations, Stefan- Boltzmann's law and Planck's law and their significances.	PO3,PSO2	K4
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B.Sc. IV sem**Course Outcomes: DSC4-PHY403T: Waves and Optics****Credits: 04**

Outcomes Statement (COs)	PO/ PSO'S	Cognitive level
CO-1: Recognize and use a mathematical oscillator equation and wave equation, and derive these equations for certain systems.	PO1	K1
CO-2: Apply basic knowledge of principles and theories about the behavior of light and the physical environment to conduct experiments.	PO3, PO4	K3
CO-3: Understand the principle of superposition of waves, so thus describe the formation of standing waves.	PO7	K2
CO-4: Understand the working of selected optical instruments like biprism, interferometer, diffraction grating.	PO11	K2
CO-5: The motion of coupled oscillators, study of Lissajous figures and behavior of transverse, longitudinal waves can be learnt in this laboratory course.	PO3	K4

Course Outcomes: DSC4-PHY403P: Waves and Optics**Credits:02**

Outcomes Statement (COs)	PO/PSO'S	Cognitive level
CO-1: Understand the principle of superposition of waves, so thus describe the formation of standing waves.	PO1, PSO1	K2
CO-2: Apply basic knowledge of principles and theories about the behavior of light and the physical environment to conduct experiments.	PO3, PO4, PO11	K3
CO-3: Student will gain hands-on experience of using various optical instruments and making finer measurements of wavelength of light using Newton Rings experiment & Resolving power	PO7, PSO3	K4
CO-4: Understand the working of selected optical instruments like biprism, interferometer, diffraction grating.	PO3,PO2	K2

B.Sc. V sem**Course Outcomes: DSE1-PHY503T2: Solid State Physics****Credits: 04**

Outcomes Statement (COs)	PO/ PSO'S	Cognitive level
CO-1: A brief idea about crystalline and amorphous substances, about lattice, unit cell, miller indices, reciprocal lattice, concept of Brillouin zones and diffraction of X-rays by crystalline materials.	PO1,PO4 PSO1,PSO3	K2
CO-2: Knowledge of lattice vibrations, phonons and in depth of knowledge of Einstein and Debye theory of specific heat of solids.	PO4,PO7 PSO3	K1
CO-3: Acquire knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss.	PO8,PO11, PSO3	K4
CO-4: Understanding the dielectric and ferroelectric properties of materials.	PO7	K2
CO-5: Understanding above the band theory of solids and must be able to differentiate insulators, conductors and semiconductors.	PO3	K2
CO-6: Apply the basic idea about superconductors and their classifications to conduct experiments.	PO2,PO5, PSO5	K3

Course Outcomes: DSE1-PHY503P2: Solid State Physics**Credits:02**

Outcomes Statement (COs)	PO /PSO'S	Cognitive level
CO-1: To carry out experiments based on the theory that they have learned to measure the magnetic susceptibility, dielectric constant,	PO3, PO4, PSO1	K3
CO-2: They will also employ to four probe methods to measure electrical conductivity and the hall set up to determine the hall coefficient of a semiconductor.	PO3, PSO1	K3
CO-3: Understanding above the band theory of solids and must be able to differentiate insulators, conductors and semiconductors.	PO3, PO11, PSO3	K2
CO-4: Apply the basic idea about superconductors and their classifications to conduct experiments	PO5, PSO5	K3

B.Sc. V sem Skill**Course Outcomes: SEC2-PHY502T: Basic Instrumentation Skills****Credits: 02**

Outcomes Statement (COs)	PO/ PSO'S	Cognitive level
CO-1: Understand the concept of measurements	PO1, PSO1	K2
CO-2: Demonstrate knowledge of basic fundamentals, terms, and units of DC and AC.	PO11, PSO3	K3
CO-3: Learn the principles involved in the measurement of current, voltage and resistance	PO2, PO11, PSO3	K1
CO-4: Understand various circuits like rectifiers filters, peak detector, sample & hold circuit using OPAMP.	PO8,PSO5	K2
CO-5: Describe the concept of working of voltmeters and ammeters using Block diagrams.	PO2, PSO4	K2
CO-6: Learn the basics working principle of DMM, CRO, Signal Generator using block diagram.	PO6, PO8	K3
CO-7: Apply the knowledge for how to use of DMM, CRO, Signal Generator for carrying out the measurements	PO7, PO8	K3

B.Sc. VI Sem**Course Outcomes: DSE4-PHY603T1: Nuclear and Particle Physics****Credits: 04**

Outcomes Statement (COs)	PO/ PSO'S	Cognitive level
CO-1: Learn the ground state properties of a nucleus.	PO1,PO8, PSO1	K1
CO-2: Know about the nuclear models and their roles in explaining the ground state properties of the nucleus.	PO3,PO5	K2
CO-3: Learn about the process of radioactivity, the radioactive decay law, the emission of alpha, beta and gamma rays, the properties of the constituents of these rays, series.	PO4,PO7	K1
CO-4: Outlines of Gamow's theory of alpha decay and Pauli's theory of beta decay with the neutrino hypothesis, the Geiger-Nuttall law, the radioactive	PO3,PSO3	K4
CO-5: Describe the construction & working	PO3,PO7,	K2

detectors of nuclear radiations like gas filled detectors, solid state and semiconductor detectors.	PSO2	
CO-6: The students are expected to learn about the principles and basic constructions of particle accelerators such as the Van-de-Graff generator, cyclotron, betatron and synchrotron	PO3, PO7	K1
CO-7: Understand the basic aspects of particle Physics	PO4, PO5, PSO1	K2

Course Outcomes: DSE4-PHY603P1: Nuclear and Particle Physics**Credits: 02**

Outcomes Statement (COs)	PO/ PSO'S	Cognitive level
CO-1: Develop basic understanding of nuclear reactions and decays with help of theoretical formulate and laboratory experiments.	PO1, PSO2	K2
CO-2: Ability to understand, construct and operate simple detector systems for nuclear radiation	PO3, PO4, PSO1	K4
CO-3: Understand the digital and analyses circuits and difference between them. Verify the Various logic GATES and their realization using diodes and transistors.	PO6, PO8, PSO3	K5

B.Sc. VI Sem Skill**Course Outcomes: SEC4-PHY602T: Renewable energy & Energy Harvesting****Credits: 02**

Outcomes Statement (COs)	PO/PSO'S	Cognitive level
CO-1: Understand the need of energy conversion and the various methods of energy storage.	PO3, PO4	K2
CO-2: Identify Winds energy as alternate form of energy and to know how it can be tapped.	PO2, PO11, PSO2	K4
CO-3: Understand the Geothermal & Tidal energy, its mechanism of production and its applications.	PO7, PO11	K3
CO-4: Able to understand the renewable energy sources available at present.	PO5	K2