

M.Sc. PHYSICS

Programme Specific Outcome

PSO-1.To achieve the depth Knowledge of physics to the student

PSO-2. A student should be capable of pursuing research in theoretical/experimental physics or related areas

PSO-3. To Acquire a through understanding of the of the fundamentals of physics

PSO-4 To enhancing the employability of the student &Rigorous training requires phasing teaching

PSO-5 To Capable of doing research at least in the preliminary way.

Course Outcome

Semester 1

Course	Outcomes
	After Completionof these courses students should be able to;
PH1CO1:Mathematical Methods in Physics-I	CO-1.To Know the idea of vector, its Applications & physical interpretations CO-2. To familiarize the different Coordinatessystems CO3- To capable of matrix calculations and its applications CO4- To Understand the tensors and its applications. CO-5.To Study the Generating function For Legendre, Hermite polynomials
PH1CO2: Classical &Quantum Mechanics	CO-1.To understand the fundamental concepts of the Lagrangian and the Hamiltonian methods and will be able to apply them to various problems; CO-2. understand the physics of small oscillations and the concepts of canonical transformations and Poisson brackets ; CO-3.To understand the basic ideas of central forces and rigid body

	<p>dynamics;</p> <p>CO-4 to understand the Hamilton-Jacobi method and the concept of action-angle variables.</p> <p>CO-5 To aware the Lagrangian formulation of relativistic mechanics.</p>
PH1CO3: Electrodynamics	<p>CO1-. To impart proper understanding of electricity magnetism and electrostatics;Co-Co-2. To know the wave nature of electromagnetic field and its properties; electromagnetic field radiating out of accelerated charges and the impact of relativity in electromagnetism along with confined propagation of electromagnetic wave</p>
PH1CO4: Electronics	<p>CO-1. To study of the flow of charge (electron) through various materials and devices such as semiconductors, resistors, inductors, capacitors, nanostructures etc.</p> <p>CO-2. To Understandingallthe applications of electronics involve the transmission of power and possibly information.</p>

Semester 2

Course	Outcomes
	<p>After Completionof these courses students should be able to</p>
PH2CO5: Mathematical methods in Physics -II	<p>CO-1.To knowthe concepts of Laplace and Fourier transforms.</p> <p>Co-2. To understand the Fourier series and it's application to solutions of partial differential equations.</p> <p>CO-3 To know the complex numbers and its applications in Physics.</p>
PH2CO6 -Quantum Mechanics -I	<p>CO-1. Tounderstand the fundamental concepts of the Dirac formalism</p> <p>CO-2. Tounderstand how quantum systems evolve in time;</p> <p>CO-3. To understand the basics of the quantum theory of angular momentum.</p> <p>CO-4. To enable the student to solve the hydrogen atom problem which is a prelude to more complicated problems in quantum mechanics.</p>

PH2CO7 Thermodynamics & Statistical Mechanics	<p>CO-1. To Know the Basics of thermodynamics , entropy & its Applications</p> <p>CO-2. – To Understand the different types of Ensembles</p> <p>CO-3. To know the different Statistical Distributions & its applications in gas</p>
PH2CO8: Condensed Matter Physics	<p>CO-1. Know the principles of structures determination by diffraction</p> <p>Co-2. To understand the principles and techniques of X-rays diffraction</p> <p>CO-3. Know the fundamental principles of semiconductors and be able to estimate the charge carrier mobility and density</p> <p>CO-4. To give an extended knowledge about magnetic properties</p>

Semester 3

Course	Outcome
	<p>After Completion of these courses students should be able to</p>
PH3CO9 -Quantum Mechanics II	<p>CO-1. To understand the different stationary state approximation methods and be able to apply them to various quantum systems;</p> <p>CO-2. To understand the basics of time-dependent perturbation theory and its application to semi-classical theory of atom-radiation interaction;</p> <p>CO-3. To understand the theory of identical particles and its application to helium;</p> <p>CO-4. To understand the idea of Born approximation and the method of partial waves. CO-5. To aware the basic concepts of relativistic quantum mechanics.</p>
PH3C10: Computational physics	<p>CO-1. To know the basic idea about the techniques used in physics to solve problems with the help of computers when they cannot be solved analytically with pencil and paper since the underlying physical system is very complex. CO-2 . To able to develop their own Algorithms of every method described in the syllabus.</p>

PH3EC2-Crystal Growth Techniques	<p>CO-1 familiarize various crystal growth methods from solution and vapour</p> <p>CO-2. Understand the practical application of crystal growth such semiconductor devices , optoelectronics devices , photo cathodes etc</p>
PH3EC1Solid State Physics	<p>CO-1. Know the Crystal defects and dislocations</p> <p>CO-2.Understand the phase diagrams in crystal</p> <p>CO-3.Know the crystal binding , excitations in solids</p>

Semester 4

Course	Outcome
	<p>After Completionof these courses students should be able to</p>
PH4C11 -Atomic &Molecular Physics	<p>CO-1 understand the atomic structure and spectra of typical one-electron and two-electron systems.</p> <p>Co-2know the theory of microwave and infra-red spectroscopies as well as the electronic spectroscopy of molecules;</p> <p>CO-3 Know the basics of Raman spectroscopy and the nonlinear Raman effects;</p> <p>Co-4 Know the spin resonance spectroscopies such as NMR and ESR. This course also introduces the student to the ideas of Mossbauer spectroscopy</p>
PH4C12 -Nuclear &Particle Physics	<p>CO-1 Know the basic properties of the nucleus and the nuclear forces.</p> <p>Co-2 UnderstandMajor models of the nucleus and the theory behind the nuclear decay process;</p> <p>CO-3. Know the physics of nuclear reactions</p> <p>CO-4. Know the interaction between elementary particles and the conservation laws in particle physics.</p> <p>CO-5.impart some idea about nuclear astrophysics and the practical</p>

	applications of nuclear physics
PH4EC3-Nano structures and Characterisation	<p>CO-1. Know the nanostructures synthesis and its properties</p> <p>CO-2. Understand Nanomaterials and applications</p> <p>CO-3. Know the Optical absorption and emission spectroscopy</p> <p>CO-4. Understand the chemical , thermal and Different X-ray diffraction methods</p>
PH4OE1- Optoelectronics	<p>CO-1. Familiarize with various optoelectronics such as Photo transistors, photo diodes, lasers</p> <p>CO-2. Fabrication techniques of opto electronic devices</p>