

Department of Physics

PROGRAMME OUTCOMES : B.Sc. PHYSICS

Department of Physics	After successful completion of three year degree program in physics & student should be able to ;
Programme outcomes	<p>PO-1. Demonstrate, solve and an understanding of major concepts in all discipliners of Physics.</p> <p>PO-2. Solve the problem and also think methodically, independently and draw a logical conclusion.</p> <p>PO-3. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of Physics experiments.</p> <p>PO-4. Create as</p> <p>PO-5. PO-6. To inculcate the scientific temperament in the students and Outside the scientific community.</p> <p>PO-7. Use modern techniques, decent equipments and Phonics software's</p>
Programme Specific Outcomes	<p>PSO-1. Gain the knowledge of Physics through theory and practical's</p> <p>PSO-2. Understand good laboratory practices and safety.</p> <p>PSO-3. Develop research oriented skills.</p> <p>PSO-4. Make aware and handle the sophisticated instrument/equipments.</p>
Course Outcomes B.Sc. Physics Semester-III	
Course	Outcomes
	After completion of these courses students should be able to;
PH-331 : mathematical Methods in Physics II	<p>CO-1. Know the Cartesian, spherical polar and cylindrical co-ordinate systems.</p> <p>CO-2. To understand the Sopecial Theory of Relativity.</p> <p>CO-3. Discuss the Michelson-Morley Experiment.</p> <p>CO-4. To obtain the series solution by Frobenius method.</p> <p>CO-5. Study the Generating function for Legendre, Hermite Polynomial.</p>
PH332 : Solid State 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 and estended knowledge about magnetic properties like. Diamagnetic, paramagnetic, ferromagnetic, ferrites and supereconductors.</p>
PH333 : Classical Mechanics	<p>CO-1. Understand Newton's Laws of motion and their applications such as projectile and rocket motion.</p> <p>CO-2. Gain the knowledge of motion in central force filed.</p> <p>CO-3. Classify elastic and inelastic seattering.</p> <p>CO-4. Know the difference between Laboratory and centre of mass system.</p> <p>CO-5. Understands Lagrangian and Hamiltonian formulation.</p> <p>CO-6. Solve the problems using Lagrangian and Hamiltonian formulation.</p> <p>CO-7. Get knowledge of canonical trans formation and Poission's bracket.</p>
PH334 : Atomic and Molecular Physics	<p>CO-1. To know the Rutherford Experiment of atom.</p> <p>CO-2. To understand molecular spectra of atom.</p> <p>CO-3. To study the Raman spectra.</p> <p>CO-4. To study the Zeeman Effect.</p> <p>CO-5. To understand the Quantum Numbers.</p>
PH335 : Computational Physics	<p>CO-1. Write algorithm and flow chart for c-programming language.</p> <p>CO-2. To use of iterative, decision making and the jump statement.</p> <p>CO-3. Understand the concept of arrays and pointers.</p> <p>CO-4. Study of user defined functions and program structures.</p> <p>CO-5. Able to use the concept graphics in c language.</p>
PH336 : Elements of Materials Science	<p>CO-1. To study the Mechanical, electrical and Thermal Properties of material.</p> <p>CO-2. Discuss the type of Phase Diagrams.</p> <p>CO-3. Know the solid solution and types of solid solution.</p>

	<p>CO-4. Understanding the Point Defect, Line defect with example.</p> <p>CO-5. Study the Diffusion Mechanism.</p> <p>CO-6. Know the difference between Elastic and Plastic Deformation.</p> <p>CO-7. To understand the Polymer Vulcanization of rubber.</p> <p>CO-8. Know the AX-type crystal structure – eg. N_aCl, ZnS etc.</p>
<p>Course Outcomes II, B.Sc. Physics</p> <p>Semester- IV</p>	
PH-341 : Classical Electrodynamics	<p>CO-1. Understand Mechanics of system of particles.</p> <p>CO-2. Know the Motion in Central Force Field.</p> <p>CO-3. Elastic and inelastic scattering.</p> <p>CO-4. Solve Lagrangian and Hamiltonian formulation.</p> <p>CO-5. Learn Canonical Transformation and Poisson's Bracket.</p>
PH-342 : Quantum Mechanics	<p>CO-1. Understand De- Broglie hypothesis and Uncertainty principle.</p> <p>CO-2. Derive Schrodinger's time dependent and independent equations</p> <p>CO-3. Solve the problems using Schrodinger's steady state equation</p> <p>CO-4. Get knowledge of rigid rotator.</p> <p>CO-5. Understand different operators in Quantum Mechanics</p>
PH-343 : Thermodynamics and Statistical Physics	<p>CO-1. To study kinetic theory of Gases.</p> <p>CO-2. To study Maxwell Relations and Application.</p> <p>CO-3. Know the elementary concept of statistics.</p> <p>CO-4. Understand statistical distribution of system of particles.</p> <p>CO-5. To study statistical ensembles.</p> <p>CO-6; To study Quantum statistics.</p>
PH-344 : Nuclear Physics	<p>CO-1. Know the properties of nucleus like binding energy, magnetic dipole moment and electric quadrupole moment.</p> <p>CO-2. To understand the concept of radioactivity and decay law.</p> <p>CO-3. To study achievement of Nuclear Models of Physics and its limitations.</p> <p>CO-4. To give an extended knowledge about nuclear reactions such as nuclear fission and fusion.</p> <p>CO-5. To understand the basic concept of Particle Physics.</p>
PH-345 : Electronics	<p>CO-1. Know the special purpose Diode.</p> <p>CO-2. To study the Transistor Amplifier.</p> <p>CO-3. To understand the FET, JFET, MOSFET.</p> <p>CO-4. To study the Operational Amplifier and their types.</p> <p>CO-5. To know the Timer IC-555 and its classification.</p> <p>CO-6 : To study the Regulated Power supply.</p> <p>CO-7 : To understand the Sequential Logic Circuits.</p>
PH-346 : Lasers	<p>CO-1. Know the history of LASERS and its basic concepts.</p> <p>CO-2. Understand the basic principle and working of different types of lasers.</p> <p>CO-3. Know the applications of lasers in various fields.</p> <p>CO-4. Understand the characteristics of LASERS.</p> <p>CO-5. Learn safety precaution and measures while handling the lasers.</p>
<p>Programme Outcomes :</p> <p>M.Sc. Physics</p>	
Department of Physics	After successful completion of two year degree program in physics a student should be able for ;
Programme outcomes	<p>PO-1. Apply the skill and knowledge in the design and development of electronic circuits to fulfill the needs of small scale electronic industry.</p> <p>PO-2. Demonstrate, solve and an understanding of major concepts in all disciplines of physics.</p> <p>PO-3. Solve the problem and also think methodically, independently and draw a logical conclusion.</p> <p>PO-4. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the result of Physics experiments.</p> <p>PO-5. Create an awareness of the impact of Physics on the society, and development outside the scientific community.</p> <p>PO-6. To inculcate the scientific temperament in the students and outside the</p>

	<p>scientific community.</p> <p>PO-7. Use modern techniques, decent equipments and Phonics software's.</p> <p>PO-8. Become professionally trained in the area of electronics, material science, lasers and nonlinear circuit.</p>
Programme Specific outcomes	<p>PSO-1. Introduce advanced techniques and ideas required in developing area of Physics</p> <p>PSO-2. Enhance students' ability to develop mathematical models for physical systems.</p> <p>PSO-3. Gain the knowledge of Physics through theory and practice's.</p> <p>PSO-4. Understand and apply Principles of physics for understanding the scientific phenomenon in classical and quantum physics.</p> <p>PSO-5. Understand and apply statistical methods for describing the quantum and classical particles phenomenon in various physical systems.</p> <p>PSO-6. Understand good laboratory practices and safety.</p> <p>PSO-7. Develop research oriented skills.</p> <p>PSO-8. Make aware and handle the sophisticated instrument/equipments.</p>
Course Outcomes M.Sc. Physics Semester- I	
Course	Outcomes
	After completion of these courses students should be able to;
PHY 101 Mathematical Method in Physics (4 Credits)	<p>CO-1. Learn Vector space and Matrices and applications of Matrices</p> <p>CO-2. Study the differential equations and special functions</p> <p>CO-3. To study fourier Series and Application and Integral Transform.</p> <p>CO-4. Learn Complex function and Calculus of Complex function.</p>
PHY 102 Classical Mechanics (4 Credits)	<p>CO-1. Understand Newton's laws of motion and their applications such as projectile and rocket.</p> <p>CO-2. Gain the knowledge of motion in central force field.</p> <p>CO-3. Classify elastic and inelastic scattering.</p> <p>CO-4. Know the difference between laboratory and centre of mass system.</p> <p>CO-5. Understands Lagrangian and Hamiltonian formulation.</p> <p>CO-6. Solve the problems using Lagrangian and Hamilton formulation.</p> <p>CO-7. Get knowledge of canonical transformation and Poisson's bracket.</p>
PHY 103 Atomic and Molecular Physics (4 Credits)	<p>CO-1. To know Atomic structure and atomic spectra.</p> <p>CO-2. To study Microwave Spectroscopy of Molecules.</p> <p>CO-3. Learn Infrared and Electronic spectroscopy of molecules Vibrational spectroscopy of diatomic molecules.</p> <p>CO-4. To Study Raman spectra.</p>
PHY 104 Electronics devices & application (4 Credits)	<p>CO-1. To know the fundamental principle of semiconductor and to establish semiconductor device</p> <p>CO-2. To understand principle photonics device</p> <p>CO-3. To study operational amplifier and its application.</p> <p>CO-4. To understand sequential logic circuit.</p>
Course Outcomes M.Sc. Physics Semester- II	
PHY 201 Quantum Mechanics (4 Credits)	<p>CO-1. Derive Schrodinger's time dependent and independent equations.</p> <p>CO-2. Solve the problems using Schrodinger's steady state equation.</p> <p>CO-3. To study the application of Time-independent Perturbation Theory.</p> <p>CO-4. To understand the WKB approximation.</p> <p>CO-5. Know the application and validity of Born Approximation.</p> <p>CO-6. To study the Symmetry in Quantum Mechanics.</p>
PHY 202 Statistical Mechanics (4 Credits)	<p>CO-1. This course develop concept in classical laws of Thermodynamics and their applications.</p> <p>CO-2. To learn Postulates of statistical mechanics.</p> <p>CO-3. To learn statistical interpretation of thermodynamics micro canonical, canonical and grand canonical ensembles.</p> <p>CO-4. To study the methods of statistical mechanics are used to develop the statistics for Bose-Einstein and Fermi-Dirac.</p>

PHY 203 Numerical Techniques in Physics (4 Credits)	CO-1. To study data handling and fitting ,finding solutions and root of equations CO-2. To understand methods of solving differential and integral equations. CO-3. Learn the method of to solve simultaneous equations and partial differential equations. CO-4. Learn C language of computer programming
PHY 204 Condensed Matter Physics (4 Credits)	CO-1. Know the principles of structures determination by diffraction. CO-2. To understand the principles and techniques of X-rays diffraction. CO-3. Know the fundamental principles of semiconductors and be able to estimate the charge carrier mobility and density. CO-4. To give and extended knowledge about magnetic properties like.
Course Outcomes M.Sc. Physics Semester- III	
PH 15 Electrodynamics (4 Credits)	CO-1. To understand Maxwell's equations and concept of electromagnetic waves CO-2. To study fressnel's equation and electromagnetic in waves guide. CO-3. To understand radiating systems, CO-4. Learn relativistics electrodynamics.
PH 16 Nuclear and particle Physics (4 Credits)	CO-1. Know the properties of nucleus like binding energy, magnetic dipole moment and electrical quadrapol moment. CO-2. To study achievement of Nuclear Models of Physics and its limitations CO-3. To give an extended knowledge about nuclear reactions such as nuclear fission and fusion. CO-4. To understand the basic concept of Particle Physics.
PH 17 Basic of laser and devices (4 Credits)	CO-1. Understand the basic of properties of laser. CO-2. Learn Einstein's theory of light. CO-3. To study the different types of laser. CO-4. Learn the different types of applications of laser.
PH 18 Thin film and Nano Physics (4 Credits)	CO-1. Know the thin film deposition methods. CO-2. Study in details chemical methods such as chemical vapor deposition, electrode deposition, spray pyrolysis method. CO-3. Learn properties of thin film. CO-4. Study the synthesis of Nanomaterials and applications of Nanotechnology.
Course Outcomes M.Sc. Physics Semester- IV	
PH 22 Fiber optics and optical fiber communication (4 Credits)	CO-1. Study the ray theory of transmission and properties of optical fiber. CO-2. Learn losses and dispersion in optical fiber. CO-3. Study light sources and detectors for optical fiber. CO-4. Understand optical fiber communication and measurements on optical fiber
PH 23 Microwaves and measurements (4 Credits)	CO-1. Know microwaves fundamental. CO-2. Study microwaves passive and active devices. CO-3. Study microwave measurement. CO-4. Learn microwave application.
PH 24 Microprocessor and microcontrollers (4 Credits)	CO-1. Know block diagram of 8085 μ p. CO-2. To understand programming of microprocessor 8085. CO-3. Learn general features of microcontroller 8051.
PH 25A Energy Physics	CO-1. To study solar photovoltaics (SPV) CO-2. Know photo thermal application of solar energy. CO-3. To study Hydrogen energy. CO-4. To understands wind and Bio energy.