

B.Sc Physics

Programme outcomes

PO1:Critical thinking

PO2:Scientific attitude

PO3:Environmental awareness

PO4:Problem Solving Ability

PO5:Social interaction

PO6:Effective citizenship

Programme Specific outcome

PSO1: Understand basic methodology of science and physics. Basic mathematical methods for physicists is also attained.

PSO2: Understand the concept of properties of matter and harmonic oscillation.

Students are expected to acquire knowledge in physics including Quantum mechanics, Electrodynamics, Optics, Nuclear physics etc.

PSO3: Study of Basic theory of mechanics and concept of special theory of relativity

Students develop written and oral communication skills in communicating physics related topics

PSO4: Students will learn laboratory skills, enabling to take measurements and analyse them.

PSO5: Apply physical principles to general real world situations.

PSO6: Analyse physical problems and develop correct solutions using natural laws.

PSO7: Identify the physics concepts in other disciplines such as mathematics, computer science, engineering and chemistry.

Course outcomes

Mechanics:

CO1: Understand the different frames of reference, inertial and non inertial.

CO2: Derivation of Lagrangian equation and its application .

CO3: Have a working knowledge of special theory of relativity

Electrodynamics

CO1: Understanding of theoretical foundation of electromagnetic phenomenon.

CO2: Ability to solve Maxwell's equation for simple configuration.

CO3: To make students able to analyse any given electrical network.

Quantum Mechanism:

CO1: The course gives an elementary introduction to quantum Physics describe the phenomenon such as black body radiation, The Photo electric effect and Compton scattering.

CO2: Basic idea of wave prosperities of particles, De Broglie waves.

CO3: Ability to develop calculation s on simple Systems using the Schrodinger equation, Heisenberg's principle of uncertainty, the concept of Spin and the Pauli's Exclusion principle.

Physical Optics and Modern Optics:

CO1: Get an introduction to the discipline of optics and its role in the modern society.

CO2: will learned to use the geometrical approximation including Fermat's principle, The Ray equation and Paraxial Matrix formalism for refractive and reflective surfaces.

CO3: Get Acquainted Fresnel's and Fraunhofer's defraction.

CO4: Learn introductory Fourier optics and the wave description if image formation.

Solid State and Spectroscopy:

CO1: Have a basic knowledge of crystal systems and spatial symmetries.

CO2: Know the principles of structure determination by diffractions.

CO3: Will be able to interpret rotational and vibrational spectroscopy.

CO4: To attain knowledge of LASER.

Electronics

CO1: Acquire basic knowledge on the working of various semi conductors devices.

CO2: understand working of transistor circuits and designing of transistor amplifier and oscillator.

CO3: Basic understanding of digital communication.

CO4: Learning of logic gates and circuits.

Nuclear and Particle Physics

CO1: Get the basic concepts of nuclear physics.

CO2: Can tell a chronology of the major events of nuclear physics.

CO3: State some quantities characterizing the decay such as half life decay constant etc.

CO4: Can explain nuclear fission and nuclear fusion.

CO5: Basic idea of elementary particles.

Thermal and Statistical Physics

CO1: Basic idea of concepts and laws in thermo dynamics, entropy temperature etc.

CO2: Understand the working of diesel engine, petrol engine etc.

CO3: Learn Maxwell's Thermo dynamic relation.

CO4: Use statistical physics method such as Boltzmann function, Fermi-Dirac and Bose-Einstein distributions to solve problems in some physical systems. Nano Science and Technology