B.Sc. (Physics)
Program Outcomes (POs) and Program Specific Outcomes (PSOs)

After successful completion of the BSc Hons Physics Programme, students will be able to demonstrate

PO 1: Science Knowledge: Explain the theoretical, conceptual, computational and experimental knowledge of science to the solution of scientific problems.

PO 2: Problem Analysis and Solution: Formulate and analyze scientific approach for solving real time problems that meet the specified needs with appropriate consideration for the broader understanding of subject.

PO 3: Data Analysis and Interpretation: Demonstrate, analyze & interpret the scientific data to provide the appropriate solution of the problem.

PO 4: Modern Tool Usage: Select and apply appropriate techniques/tools effectively including graphical techniques, IT tools, reports and presentations within the scientific environment.

PO 5: Environment and Sustainability: Understand the impact of the scientific solutions in societal and environmental contexts, demonstrate the knowledge of, and need for sustainable development.

PO 6: Teamwork and Ethics: Function effectively as an individual and as a member or leader in diverse teams, and in multidisciplinary settings by applying the ethical principles.

PO 7: Communication: Demonstrate professional attitude with effective communication that support and enhance individual/team performance.

PO 8: Technical Project Handling: Demonstrate knowledge of science and its various principles and apply them in one's own work, as a member and leader in a team, to handle projects in multidisciplinary environments.

PO 9 : Life-long Learning: Recognize the need to engage in lifelong learning through continuing education and research.

PSO 1: Students will able to assess and compare the scientific information to enable them to have a successful and productive career in the field of Physics.

PSO 2: Students will acquire a combination of theoretical, conceptual, analytical and experimental knowledge and skills in the field of Physics.

PSO 3: Students will able to work individually or in a team in a way that is informed by openness, curiosity and a desire to meet new challenges.

COURSE OUTCOME

B.Sc. PART -1(HONOURS)

PAPER – I (MECHANICS)

After successful completion of course, students will be able to:

CO1. Understand the basic concepts of mechanics to get proper knowledge about the behavior of Mechanical systems.

CO2. Compute the dynamics of physical systems under the influence of central force and relativity. CO3. Apply the elementary knowledge of mechanics to solve the problems, seen or unseen, related with Oscillations, Dynamics, Motion under Central Force and Relativity of physical system.

CO4. Analyze the various physical phenomena in view of various mechanical concepts dealing with fundamentals of dynamics, collisions, Rotational Dynamics, Central Force, Oscillations of a system and relativity

PAPER – II (THERMODYNAMICS)

After successful completion of course, students will be able:

CO1. Demonstrate good understanding of the foundational principles of thermodynamics, statistical mechanics and their application to kinetic theory of gases.

CO2. Compute and comprehend thermodynamic entities such as entropy, thermodynamic potentials and Maxwell's statistics from fundamental laws of thermodynamics.

CO3. Apply the knowledge of thermodynamic principles and different physical properties of systems such as heat capacity, enthalpy, entropy, free energy to solve physics problems.

CO4. Devise and implement a systematic strategy for solving a complex problem in thermodynamics and statistical mechanics by breaking it down into its constituent parts.

B.Sc. PART -II(HONOURS)

PAPER – III (OPTICS)

After successful completion of course, students will be able to:

1. Demonstrate the fundamentals of Optics and Electromagnetic
2. Differentiate between different optical phenomena
3. Calculate reflection and transmission coefficient
4. Apply the knowledge to understand the basics of optical devices

B.Sc. PART –II (HONOURS)
PAPER – IV (MODERN PHYSICS)

After successful completion of course, students will be able to:

1. Demonstrate the fundamentals of electromagnetism
2. Differentiate between different electrical and magnetic properties of materials
3. Analyze electrical networks to calculate circuit parameters
4. Apply the knowledge of modern physics to explain working of modern devices.

B.Sc. PART -III(HONOURS)
PAPER – V

After successful completion of course, students will be able to:

1 Demonstrate the knowledge of coordinate systems and partial differential equations

2. Calculate Hamiltonian and Lagrangian for different problems
3. Analyze the complex systems using the concepts of quantum mechanics
4. Apply the knowledge of classical and quantum mechanics to different macroscopic and microscopic objects

B.Sc. PART -III(HONOURS)

PAPER – VI

After successful completion of course, students will be able to:

1. Explain the fundamentals of statistical mechanics
2. Differentiate between different thermodynamic functions and ensembles
3. Calculate distribution functions
4. Analyze the working of different solid state devices

B.Sc. PART -III(HONOURS)

PAPER – VII

After successful completion of course, students will be able to:

1 Demonstrate the fundamental understating of electrodynamics, crystallography and spectroscopy
2. Differentiate between different crystal structures
3. Calculate miller indices and k vectors of different crystal structures
4 Apply the selection rules to find out the forbidden spectra of some material