

Program Outcomes (PO):
The learning outcomes of the undergraduate degree course in physics are as follows:

- **In-depth disciplinary knowledge:** The student will acquire comprehensive knowledge and understanding of the fundamental concepts, theoretical principles and processes in the main and allied branches of physics.

- **In-depth disciplinary knowledge:** The student will acquire comprehensive knowledge and understanding of the fundamental concepts, theoretical principles and processes in the main and allied branches of physics.
- **Hands-on/ Laboratory Skills:** Comprehensive hands-on/ laboratory exercises will impart analytical, computational and instrumentation skills. The students will be able to demonstrate mature skills for the collation, evaluation, analysis and presentation of information, ideas, concepts as well as quantitative and/or qualitative data.
- **Role of Physics:** The students will develop awareness and appreciation for the significant role played by physics in current societal and global issues. They will be able to address and contribute to such issues through the skills and knowledge acquired during the programme
- **Communication and Skills:** Various DSCs, DSEs, SECs, and GEs have been designed to enhance student's ability to write methodical, logical and precise reports. The courses will, in addition, guide the student to communicate effectively through presentations, writing laboratory/ project reports and dissertations.
- **Critical and Lateral Thinking:** The programme will develop the ability to apply the underlying concepts and principles of physics and allied fields beyond the classrooms to real life applications, innovation and creativity.
- **Research skills:** The course provides an opportunity to students to hone their research and innovation skills through assignment/internship/dissertation. It will enable the students to demonstrate mature skills in literature survey, information management skills, data analysis and research ethics.

Signature of Convener & Members (CBoS):

Course Learning Outcomes (CLO)	<i>After going through the course, the student should be able to:</i> ➤ <i>Analyze and apply the laws of motion to various dynamical situations.</i> ➤ <i>Explain and demonstrate the principle of conservation of momentum and energy including their application in real-world scenario such as collision and energy transformation.</i> ➤ <i>Evaluate and calculate moment of inertia for objects of different shapes and analyze how these properties affect the motion of rotating bodies.</i> ➤ <i>Analyze flow of fluids.</i> ➤ <i>Describe special relativistic effects and their effects on the mass and energy of a moving object.</i>
---	---

Course Learning Outcomes (CLO)	After going through the course, the student should be able to: ➤ State various laws related with electrostatics, dielectric, electric current, magnetism and electromagnetic induction. ➤ Apply vector (electric fields, Coulomb's law) and scalar (electric potential, electric potential energy) formalisms of electrostatics. ➤ Compare rise and decay of current in LR, CR, LCR circuits. ➤ Apply Biot-Savart law for calculation of magnetic field in simple geographic situations. ➤ Derive and analyze Maxwell's equations.
---------------------------------------	---

Course Learning Outcomes (CLO)	After going through the course, the student should be able to: □ Demonstrate a deep comprehension of the fundamental principles of thermodynamics, including concepts such as energy, entropy and laws of thermodynamics. □ Apply the laws of thermodynamics to analyze and solve problems related with energy transfer, heat engines, refrigeration system and other thermodynamic processes. □ Analyze basic aspects of kinetic theory and transport phenomenon in gases.
---------------------------------------	--

Course Learning Outcomes (CLO)	After going through the course, the student should be able to: ➤ Analyze the behavior of waves propagating through different mediums and predict how factors such as density, elasticity, and temperature affect wave propagation. ➤ Demonstrate an understanding of interference phenomena, including constructive and destructive interference, and apply this knowledge to solve problems involving wave superposition. ➤ Explain the concept of diffraction and its implications for wave propagation, including how waves bend around obstacles and spread out after passing through narrow openings. ➤ Describe the polarization of waves, including linear, circular, and elliptical polarization, and apply polarization concepts to analyze and manipulate electromagnetic waves.
---------------------------------------	---

		Course Learning Outcomes (CLO)
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to: ➤ Explain the basic postulates of quantum mechanics ➤ Explain the concept of the wave packet ➤ Describe the principle of Heisenberg's uncertainty principle and its applications ➤ Gain knowledge about physical quantities as operators ➤ Apply the Schrodinger equation to various quantum systems

Course Learning
Outcomes (CLO)

At the end of this course, the students will be able to:

- To give knowledge of some basic electronic components and circuits. Understand the basic principles and industrial applications of semiconductor diode, Zener diode and transistor
- Use diodes and transistors in electronic circuits
- Understand the construction working and applications of transistor
- Understand the construction and working principles of various instruments that are used in the physics laboratory
- Gain knowledge on importance of filter a circuit. Describe the working of oscillators

5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to: • Understand the basic principles and industrial applications of semiconductor diode, Zener diode and transistor • Understand the construction working and applications of transistor • Gain the knowledge of analogue and digital circuits • Understand the construction and working principles of various instruments that are used in the physics laboratory • Develop interest in electronic components
---	--------------------------------	---

5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to: • Gain of advanced theoretical and experimental method including the use of numerical method • Understand the basic postulates of quantum mechanics • Gain knowledge about physical quantities as operators • Understand the Schrodinger equation and its applications • Gain knowledge about structure of nucleus, nuclear fission and fusion and be familiar of nuclear energy
---	--------------------------------	--