

**DEPARTMENT OF PHYSICS**  
**B.Sc. PHYSICS**

**PROGRAMME OUTCOMES**

After the completion of the Programme, Students will be able to

**PO1:** Apply the Basic principles of Physics to the events occurring around us and also in the world.

**PO2:** Try to find out or analyze scientific reasoning for various things.

**PO3:** Develop ability to work in group.

**PO4:** Develop capacity of critical reasoning, judgment and communication skills.

**PO5:** Develop abilities for logical thinking.

**PO6:** Apply the knowledge to develop the sustainable and eco friendly technology for pollution free environment.

**PO7:** Collaborate effectively on team oriented projects in the field of Physics.

**PO8:** Communicate scientific information in a clear and concise manner both orally and in writing or through audio and video presentations.

**PO9:** Become empowered to face the challenges of the changing universe.

**PO10:** Be initiated into the basics of research.

**SPECIFIC PROGRAMME OUTCOMES**

This undergraduate course in Physics Would provide the opportunity to the students:

**SPO1:** To understand the basic laws and explore the fundamental concepts of physics

**SPO2:** To understand the concepts and significance of the various physical phenomena.

**SPO3:** To carry out experiments to understand the laws and concepts of Physics.

**SPO4:** To apply the theories learnt and the skills acquired to solve real time problems.

**SPO5:** To acquire a wide range of problem solving skills, both analytical and technical and to apply them.

**SPO6:** To enhance the student's academic abilities, personal qualities and transferable skills this will give them an opportunity to develop as responsible citizens.

**SPO7:** To produce graduates who excel in the competencies and values required for leadership to serve a rapidly evolving global community.

**SPO8:** To motivate the students to pursue PG courses in reputed institutions.

**SPO9:** This course introduces students to the methods of experimental physics. Emphasis will be given on laboratory techniques specially the importance of accuracy of measurements.

**SPO10:** Providing a hands-on learning experience such as in measuring the basic concepts in properties of matter, heat, optics, electricity and electronics.

## DEPARTMENT OF PHYSICS

### SEM-I MECHANICS (PAPER I)

After the completion of the course, Students will be able to

**CO1:** The students would learn about the behaviour of physical bodies it provides the basic concepts related to the motion of all the objects around us in our daily life.

**CO2:** The course builds a foundation of various applied field in science and technology; especially in the field of mechanical engineering.

**CO3:** The course comprises of the study vectors, laws of motion, momentum, energy, rotational motion, gravitation, fluids, elasticity and special relativity.

### SEM-II THERMAL PHYSICS (PAPER II)

After the completion of the course, Students will be able to

**CO1:** The course makes the students able to understand the basic physics of heat and temperature and their relation with energy, work, radiation and matter.

**CO2:** The students also learn how laws of thermodynamics are used in a heat engine to transform heat into work.

**CO3:** The course contains the study of laws of thermodynamics, thermodynamic description of systems, thermodynamic potentials, kinetic theory of gases, theory of radiation and statistical mechanics.

### SEM-III ELECTROMAGNETISM (PAPER III)

After the completion of the course, Students will be able to

**CO1:** It gives an opportunity for the students to learn about one of the fundamental interactions of electricity and magnetism, both as separate phenomena and as a singular electromagnetic force.

**CO2:** The course contains vector analysis, electrostatics, magnetism, electromagnetic induction and Maxwell's equations.

**CO3:** The course is very useful for the students in almost every branch of science and engineering.

### SEM-IV WAVES AND OPTICS (PAPER IV)

After the completion of the course, Students will be able to

**CO1:** The course comprises of the study of superposition of harmonic oscillations, waves motion (general), oscillators, sound, wave optics, interference, diffraction, polarization.

**CO2:** The course is important for the students to make their career in various branches of science and engineering, especially in the field of photonic engineering.

### SEM-V MODERN PHYSICS (PAPER-V)

After the completion of the course, Students will be able to

**CO1:** Students would know about the basic principles in the development of modern physics.

**CO2:** The topics covered in the course build a basic foundation of undergraduate physics students to study the advance branches: quantum physics, nuclear physics, particle physics and high energy physics.

**CO3:** The course contains the study of Planck's hypothesis, photoelectric effect, Compton effect, matter waves, atomic models, Schrodinger wave equations, and brief idea of nuclear physics.

### SEM-VI BASIC ELECTRONICS (PAPER VI)

After the completion of the course, Students will be able to

**CO1:** The students would gain the knowledge of Basic Electronics circuits, network theorems and measuring instruments.

**CO2:** They would know about common solid state devices: Semiconductor diodes and transistors.

**CO3:** The topics also include the Rectifiers, Filters and their applications, number systems and logic gates which are foundation blocks of digital electronics.

**CO4:** Students would learn about electronic circuits such as Amplifiers and Oscillators.

**CO5:** Various types of Amplifier and Oscillator circuits their working and applications in in domestic, industrial and scientific devices/equipments.