

**DEPARTMENT OF PHYSICS  
PROGRAMME SPECIFIC OUTCOME**

Present course is aimed to provide knowledge of basics of Physics which are relevant to the understanding of modern trends in higher physics.

PSO-1. The First Paper at preparing the background of Fundamentals of Mechanics, oscillations and properties of Matter. It constitutes an essential pre- requisite for better understanding of Physics.

PSO-2. The Second paper at preparing the background of Fundamentals of Electricity, Magnetism and Electromagnetic theory. It constitutes on essential pre- requisite for better understanding of Physics.

PSO-3. Next year syllabus the First paper at preparing the background of Fundamentals of Thermodynamics, kinetic theory and statistical – physics. It constitutes on essential pre – requisite for better understanding of Physics.


PSO-4. The second paper at preparing the background of Fundamentals of wave, Acoustics, optics and LASER. It constitutes on essential pre- requisite for better understanding of Physics.

PSO-5. Next year syllabus the First paper is aimed at preparing the modern physics which includes the relativistic and Quantum ideas mainly coarsened with atomic molecular and nuclear Physics.

PSO-6. The second paper is mainly concerned with solid state physics. Solid state Devices and Electronics. This course is quite important from the application aspects of modern electronic – devices.

  
**Assistant Professor**

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**I/C PRINCIPAL**  
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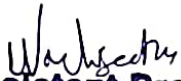
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**DEPARTMENT OF PHYSICS**  
**PHYSICS PROGRAM LEARNING OUTCOMES**

Graduates from BSc. Physics undergraduate degree program will be able to:

- **Outcome 1:** Demonstrate a thorough conceptual understanding in the core areas of physics (classical mechanics, electrodynamics, statistical mechanics, Quantum mechanics) and the supporting mathematics, including the range of validity of key concepts (eg. Conservation laws)
- **Outcome 2:** Identify the most relevant physics concepts in approaching a “messy” problem that might arise in everyday life, and devise a strategy in order to arrive at the solution. Additionally, achieve an understanding of the connection between key physics concepts and technological applications.
- **Outcome 3:** Demonstrate level of proficiency in using mathematical concepts and methods that allows for applying key physics concepts effectively when solving problems.
- **Outcome 4:** Use software tools and coding at a level necessary to perform mathematical operations, statistical analysis and simulations in solving complex problems.
- **Outcome 5:** Use basic laboratory equipment correctly and effectively in order to conduct measurements, and analyze and interpret the results, including a quantitative understanding of uncertainties.
- **Outcome 6:** Locate existing scientific research relevant to a given topic and evaluate its accuracy.
- **Outcome 7:** Communicate the results of scientific work efficiently, making use of clear and well organized writing and presentation skills, and employ equations and visualization tools as needed.

Furthermore, the physics will promote and provide opportunities to students for collaborative work and for experimental participation in advanced laboratories, independent research, internships, and study abroad programs.



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DEPARTMENT OF PHYSICS

COURSE OUTCOMES (CO) **B.Sc.PART -I**

**COURSE 02: Electricity, Magnetism and Electromagnetic Theory.**

CO- 01. After completion of this course the students will be able to the background of Fundamentals of able to demonstrate Gauss Law, Coulomb's Law for electric field and its applications to systems of point charges, Line, Surface and volume distribution of charges.

CO- 02. After completion of this course the students will be able to background of Fundamentals of various network, theories and their applications.

CO- 03. After completion of this course the students will be able to the background of the Fundamentals of Magnetic field produced by magnetic dipoles and electric current and explain Faraday - Lenz Maxwell's Equations to articulate the relationship between electric and magnetic field. So able to demonstrate a working and understanding of capacitor and Transformer.

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DEPARTMENT OF PHYSICS

COURSE OUTCOMES (CO) **B.SC.PART - I**

**COURSE 01: Mechanics, Oscillations, and properties of matter.**

- CO- 01. After completion of this course the students will be able to the background of Fundamentals of motions and their applications to various dynamical situations, concept of Galilean invariance. It is also learn the Concept of Conservation of energy, momentum and angular momentum and apply to basic problems.
- CO- 02. After completion of this course the student will be able to the background of Fundamentals of expression for the moment of inertia about the given axis and different uniform mass distributions.
- CO- 03. After completion of this course the student will be able to the background of Fundamentals of apply the principles of elasticity, viscosity and surface tension.
- CO- 04. After completion of this course the student will be able to the background of Fundamentals of apply Kepler's Law to describe the motion of Planets and explain the phenomena of simple harmonic motion and properties of systems of executing such motions.

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COURSE OUTCOMES (CO)

**B.SC.PART -II**

**COURSE 03: Thermodynamics, kinetic Theory and statistical Physics.**

CO- 01. After completion of this course the students will be able to the background of Fundamentals of basic concept of Laws of thermodynamics, the concept of entropy and the associated theorems, the thermodynamics potentials and their physical interpretations.

CO- 02. After completion of this course the students will be able to describe about Maxwell's equations and the basic concepts of kinetic theory of gases, Maxwell-Boltzman distribution Law, Equations of energies, mean free path of molecular collisions, etc.

CO- 03. After completion of this course the students will be able to the background and Fundamentals of describe the Real gas equation, Vander walls equation of state and Joule Thompson effect etc.

  
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COURSE OUTCOMES (CO) **B.SC.PART -II**

**COURSE: 04: Wave, Acoustics, Optics And Laser**

- CO- 01. After completion of this course the students will be able to the background and Fundamentals of the principle of Superposition of Waves and describe the formation of standing waves.
- CO- 02. After completion of this course the students will be able to the background of the basic knowledge of principles and theories about the behavior of light and the physical environment to conduct experiments.
- CO- 03. After completion of this course the students will be able to the background and fundamentals of use the principles of wave motion superposition to explain the physics of polarization, interference and diffraction. Also describe the working of selected optical instrument such as biprism, interferometer, diffraction grating.
- CO- 04. After completion of this course the student will be able to the background and fundamentals of describe the spontaneous and stimulated emission of radiation, optical pumping and population inversion as well as Ruby Laser and He- Ne Laser, semiconductor Laser.

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COURSE OUTCOMES (CO)

**B.SC.PART -III**

**COURSE: 05: Relativity, Quantum Mechanics, Atomic, Molecular and Nuclear Physics.**

- CO- 01. After completion of this course the students will be able to the background of Fundamentals of aspects of the inadequate of classical mechanics and understand of quantum mechanics and Also ability to discuss and interpret experiments that reveal the dual nature of light.
- CO- 02. After completion of this course the students will be able to the background and fundamentals of wave packet, and uncertainty principle, also describe the central concepts of quantum mechanics and time dependent Schrodinger's equation.
- CO- 03. After completion of this course the student will be able to the background and Fundamentals of properties of Nuclei, structure of atomic and to calculate the decay rates and lifetime of radioactive - decays.
- CO- 04. After completion of this course the students will be able to describe the Fission and Fusion, Nuclear processes to produce Nuclear energy in nuclear Reactor and stellar energy in stars.

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DEPARTMENT OF PHYSICS  
COURSE OUTCOMES (CO)

**B.SC.PART -III**

**COURSE: 06: Solid State Physics, Solid State Devices and Electronics**

- CO- 01. After completion of the crystalline, amorphous substances and diffraction of X-Rays by crystalline materials. Also describe the Lattice parameters, vibrations, photons and in depth of knowledge of Einstein and Debye theory of specific heat of solids.
- CO- 02. After completion of the course the students will be able to the background of fundamentals of the bond theory of Solids and must be able to differentiate insulators, conductors and semiconductors. Also describe the N- type and P-type semiconductors, P-N junctions, Zener Diode, Tunnel Diode, LED diode, Application of P-N junction for different type of rectifiers and Voltage regulators.
- CO- 03. After completion of this course the students will be able to describe the PNP and NPN transistors, and their applications as a amplifiers and Oscillators.
- CO- 04. After completion of this course the students will be able to basic knowledge of computer, MS Word, C - Language and its applications.

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