

WAIKHOM MANI GIRLS' COLLEGE, THOUBAL

PROGRAMME : BACHELOR OF SCIENCE

DEPARTMENT NAME : PHYSICS

PROGRAM SPECIFIC OUTCOMES:

- PSO1:** Help the students to understand the fundamentals of mechanics, gravitation, oscillation and concept of theory of relativity.
Laboratory works relating to the above are also done.
- PSO2:** Students will associate with every terms in thermodynamics and also elaborate the ideas of optics as well as quantum optics.
Laboratory works relating to the above are also done.
- PSO3:** Describe the different concepts of electric and magnetic fields with the laws and theorems associated with them.
Laboratory works relating to the above are also done.
- PSO4:** All the students will learn Atomic physics, Nuclear properties with different nuclear models and reactions and a brief concept of radioactivity.
Laboratory works have been done.
- PSO5:** Perceive the knowledge of electronics, basic analysis of various types of transistor, amplifier and a brief concepts of digital circuit, understand the theoretical study of mathematical physics and its application in differential functions and different equation.
Laboratory works have also been done.
- PSO6:** Gives the microscopic study of quantum theory with basic postulates. Also access the electric and magnetic properties of materials with lattice dynamics and grasp the idea od superconductivity with physics in low dimensions like nanoscience.
Laboratory works relating to the above are also done.

COURSE OUTCOMES(PHYSICS)

Semester I

PHY-101 : MECHANICS

After the course is completed, the student must be able to understand.

- CO1: Fundamentals of Dynamics
CO2: Rotation Dynamics
CO3: Gravitational and Central Force Motion
CO4: Oscillatory Motion
CO5: Special Theory of Relativity
CO6: Laboratory/Practical Works relating to Mechanics

Semester II

PHY-202 : THERMAL PHYSICS AND OPTICS

After the course is completed, the student must be able to understand.

- CO1: Thermodynamics
- CO2: Kinetic Theory of Gases and Radiation
- CO3: Interference and diffraction
- CO4: Polarization
- CO5: Elements of Quantum Optics
- CO6: Laboratory/Practical Works relating to Thermal Physics and Optics

Semester III

PHY-303 : ELECTRICITY AND MAGNETISM

After the course is completed, the student must be able to understand.

- CO1: Vector and Scalar Fields
- CO2: Electric Field
- CO3: Magnetic Field
- CO4: Electromagnetic Induction
- CO5: Laboratory/Practical Works relating to Electricity and Magnetism

Semester IV

PHY-404 : ATOMIC AND NUCLEAR PHYSICS

After the course is completed, the student must be able to understand.

- CO1: Mass Spectroscopy and X-Ray
- CO2: Atomic Spectra
- CO3: Radioactivity
- CO4: Particle Accelerator
- CO5: Nuclear Detectors
- CO6: Nuclei and their Properties
- CO7: Nuclear Models
- CO8: Nuclear Reactions
- CO9: Laboratory/Practical Works relating to above

Semester V (Honours 1)

PHY-505 : ELECTRONICS

After the course is completed, the student must be able to understand.

- CO1: Basic Circuit Analysis
- CO2: Semiconductor Diodes
- CO3: BI-polar Junction Transistors (BJT)
- CO4: Field Effect Transistors (FET)
- CO5: Amplifiers
- CO6: Oscillators

CO7: Digital Circuits

Semester V (Honours 2)

PHY-506 : MATHEMATICAL PHYSICS

After the course is completed, the student must be able to understand.

CO1: Complex Variables and their Functions

CO2: Special Functions

CO3: Partial Differential Equations

CO4: Fourier Series

Semester V (Honours 3)

PHY-507 : LABORATORY

Laboratory/Practical Works

Semester VI (Honours 4)

PHY-608 : QUANTUM MECHANICS

After the course is completed, the student must be able to understand.

CO1: Origin of Quantum Theory

CO2: Basic Postulates and Formalism

CO3: Stationary States and Energy Eigen-States

CO4: Particle in One-Dimensional Box

CO5: Linear Harmonic Oscillators

CO6: One-Dimensional Potential Barrier

CO7: Hydrogen Atom

Semester VI (Honours 5)

PHY-609 : PHYSICS OF MATERIALS

After the course is completed, the student must be able to understand.

CO1: Crystal Structure

CO2: Electrical Properties of Materials

CO3: Magnetic Properties of Materials

CO4: Lattice Dynamics

CO5: Superconductivity

CO6: Physics of Low Dimension

Semester VI (Honours 6)

PHY-610 : LABORATORY

Laboratory/Practical Works