Sai College®

# COURSE OUTCOMES

# OF

# BACHELORS OF SCIENCE

## VISION

To build foundation for excellence and spur development of the Institution as a premier Institution by igniting and nurturing enthusiasm, interests and passion, in the study of physics.

## MISSION

- To awaken the young minds and discover their talents both in theory and in practical Physics.
- To support the developmental activities of the College and make the Department vibrant.
- To impart quality education and achieve academic excellence through planning, leadership, brilliance, inspiration and effectiveness.
- To evolve strategies towards performance planning of the department.

## Course Objectives

1. To develop a strong foundation for the student in the different areas of physics.
2. To make the students of B. Sc. To develop a practical skills.
3. To develop the skills for the lab technician.
4. To develop the skills for the teacher.
5. To make the students of B.Sc. to develop research assistant and assistant scientist.

# DEPARTMENT OF PHYSICS

## SYLLABUS

| Paper | Paper Name |
|---|---|
| **B.Sc. I** | |
| Paper –**I** | Mechanics, Oscillations & Properties of Matter |
| Paper-II | Electricity, Magnetism & Electromagnetic Theory |
| **B.Sc. II** | |
| Paper –I | Thermodynamics, Kinetic Theory & Statistical Physics |
| Paper- II | Waves, Acoustic & Optics |
| **B.Sc. III** | |
| Paper –I | Relativity, Quantum Mechanics, Atomic molecular & Nuclear Physics |
| Paper- II | Solid State Physics, Solid State devices & Electronics |

**Course Outcomes**

At the end of this course, a student will have developed ability to:

| Paper | Paper Name | Course Outcome |
|---|---|---|
| **B.Sc. I** | | |
| **Paper I** | Mechanics, Oscillations & Properties of Matter | **CO-1.**Understand the characteristic features od motion under gravity.<br>**CO-2.**Determine the theoretical and practical moment of inertia of different bodies.<br>**CO-3.**Understand the concept of harmonic motion and analyze different type.<br>**CO-4.**Understand the concept of electric and magnetic field.<br>**CO-5.**Understand the concept of the elasticity and its relevance and surface tension. |
| **Paper II** | Electricity, Magnetism & Electromagnetic Theory | **CO-1.**Understand basics of Vector and Scaler.<br>**CO-2.**understand divergence,gradient,curl and their physical interpretation.<br>**CO-3.**Understand the concept of charge distribution in electrostatics.<br>**CO-4.**Understand the concept of alternating current and the different circuit.<br>**CO-5.**Understand the concept of magnetostatics and some law's. Illustrate faraday's law of induction. Maxwell's equation in different media and displacement current. |

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| **Lab course** | | 1.Design and resolve circuit for electronic applications.<br>2.Record data as required by the experimrntal objectives.<br>3.Analyse recored data and formulate it got desired result.<br>4.Interpret result and check for attainment of proposed objective. |
| **B.Sc. II** | | |
| **Paper I** | Thermodynamics, Kinetic Theory & Statistical Physics | **CO-1.**Understand various thermodynamic law, processes and work done and the concept of entropy.<br><br>**CO-2**.Analyses thermal conducitivity and black body radition.understand the concept of maxwell's thermodynamics relations and application.<br><br>**CO-3.**Understand the concept of ideal gas and real gas.the concept of liquefaction and transport phenomena in gases.<br><br>**CO-4.**Understand the concept of the probability and thermodynamic probability.<br><br>CO-5.Discuss Maxwell-Boltzmann, Bose-Einestein and Fermi-Dirac statistics. |
| **Paper II** | | **CO-1.**Wave in media,understand the event like reflection,refraction and differation of sound.<br><br>**CO-2.**Understand the concept of fermate's principle and the concept of aberrations in images and optical instruments.<br><br>**CO-3.**Understand the concept of interference of light and the concept of haidinger fringes and compare the another fringes.<br><br>**CO-4.**Apply the concept of diffration and refraction.understand the concept of polarization and different method of production.<br><br>**CO-5.**Understand the characteristic and type of laser. |
| **Lab course** | | **CO-1.**Design and resolve circuit for electronic applications.<br>**CO-2**.Record data as required by the experimrntal objectives.<br>**CO-3.**Analyse recored data and formulate it got desired result. |

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| | | **CO-4**.Interpret result and check for attainment of proposedobjective. |
| **B.Sc. III** | | |
| **Paper I** | Relativity, Quantum Mechanics, Atomic molecular & Nuclear Physics | **CO-1.**Understand the different type of frames of references. Galilen and lorentz transformation law.<br><br>**CO2.**Understand wave properties of particles,De-Broglie waves and its implification on the uncertainty principle.<br><br>**CO-3.**Analyse schodinger's equation.application to particle in one and three dimensional box.<br><br>**CO-4.**Understand the concept of different type of spectra.<br><br>**CO-5.**Understand the concepts of nuclear models.fission and fussion,nuclear reactions,detector's and radioactivity. |
| **Paper II** | Solid State Physics, Solid State devices & Electronics | **CO-1.**Distinguish different crystal structures with examples.understand the concept of the X-ray diffraction.<br><br>**CO-2.**Understand types of atom models and related principles,atyomic nucleus and its fundamental properties.<br><br>**CO-3.**Understand the concept of semiconductor and semi conductor's devices FET<br><br>**CO-4.**Understand the concept of power supply and the CE, CB, CC amplifiers characteristics and the concept of different type's of oscillators.<br><br>**CO-5.**Understand various number system and their conversions.analyze various problems and create programe to solve it using C. |
| **Lab course** | | **CO-1.**Design and resolve circuit for electronic applications.<br>**CO-2.**Record data as required by the experimrntal objectives.<br>**CO-3.**Analyse recored data and formulate it got desired result.<br>**CO-4.**Interpret result and check for attainment of proposed |

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| | | objective. |