

## **Programme: B.Sc.**

### **Program Outcomes**

Bachelor of Science (B.Sc.) offers theoretical as well as practical knowledge about different subject areas. These subject areas include Physics, Chemistry, Mathematics and Biology, Zoology and other fields depending on the specialization a student opts. This programme course is most beneficial for students who have a strong interest and background in Science and Mathematics. The course is also beneficial for students who wish to pursue multi and inter-disciplinary science careers in future. Following are the various programme outcomes:

1. This course forms the basis of science and comprises of the subjects like physics, chemistry, biology, zoology and mathematics.
2. It helps to develop scientific temper and thus can prove to be more beneficial for the society as the scientific developments can make a nation or society to grow at a rapid pace.
3. After the completion of this course students have the option to go for higher studies i.e. M. Sc and then do some research for the welfare of mankind.
4. After higher studies students can join as scientist and can even look for professional job oriented courses.
5. This course also offers opportunities for serving in Indian Army, Indian Navy, Indian Air Force as officers.
6. Students after this course have the option to join Indian Civil Services as IAS, IFS etc..
7. Science graduates can go to serve in industries or may opt for establishing their own industrial unit.
8. After the completion of the B.Sc. degree there are various other options available for the science students. Often, in some reputed universities or colleges in India and abroad the students are recruited directly by big MNC's after their completion of the course.
9. Apart from the research jobs, students can also work or get jobs in Marketing, Business & Other technical fields. Science graduates also recruited in the bank sector to work as customer service executives. Students can also find employment in government sectors.

### **Programme Specific Outcomes (PHYSICS)**

1. Introduce advanced techniques and ideas required in developing area of Physics.
2. Enhance students' ability to develop mathematical models for physical systems.
3. Gain the knowledge of Physics through theory and practical's.
4. Understand and apply principles of physics for understanding the scientific phenomenon in classical and quantum physics.
5. Understand and apply statistical methods for describing the quantum and classical a particles phenomenon in various physical systems.
6. Understand good laboratory practices and safety.

7. Develop research oriented skills.

8. Make aware and handle the sophisticated instruments/equipments.

### Course Outcome PHYSICS

Topics	Outcome
<b>Solid State Physics</b>	<ul style="list-style-type: none"><li>• Know the principles of structures determination by diffraction.</li><li>• To understand the principles and techniques of X-rays diffraction.</li><li>• Know the fundamental principles of semiconductors and be able</li><li>• To estimate the charge carrier mobility and density.</li><li>• To give an extended knowledge about magnetic properties like diamagnetic, paramagnetic, ferromagnetic, ferrites and superconductors.</li></ul>
<b>Atomic and Molecular Physics</b>	<ul style="list-style-type: none"><li>• To know the Rutherford Experiment of atom.</li><li>• To understand molecular spectra of atom.</li><li>• To study the Raman spectra.</li><li>• To study the Zeeman Effect.</li><li>• To understand the Quantum Numbers.</li></ul>
<b>Classical Electrodynamics</b>	<ul style="list-style-type: none"><li>• Understand Mechanics of system of particles.</li><li>• Know the Motion in Central Force Field.</li><li>• Elastic and inelastic scattering.</li><li>• Solve Langrangian and Hamiltonian formulation.</li><li>• Learn Canonical Transformation and Poisson's Bracket.</li></ul>
<b>Thermodynamics and Statistical Physics</b>	<ul style="list-style-type: none"><li>• To study kinetic theory of Gases.</li><li>• To study Maxwell Relations and Application.</li><li>• Know the elementary concept of statistics.</li><li>• Understand statistical distribution of system of particles.</li><li>• To study Quantum statistics.</li></ul>
<b>Nuclear Physics</b>	<ul style="list-style-type: none"><li>• Know the properties of nucleus likes binding energy, magnetic dipole moment and electric quadruple moment,</li><li>• To understand the concept of radioactivity and decays law.</li><li>• To study achievement of Nuclear Models of Physics and its Limitations.</li><li>• To give an extended knowledge about nuclear reactions such as nuclear fission and fusion.</li><li>• To understand the basic concept of Particle Physics.</li></ul>