

1. Department of Botany

Programme Outcomes (B.Sc. Botany)

- PO1 Practical skills – Students learn to carry out practical work in the lab as well as in the field.
- PO2 Scientific knowledge – Understand the basics of plant science and fundamental processes of plants and their exploration.
- PO3 Environment and sustainability – Understand the environmental issues and their impact on society.
- PO4 Creative skills – Students express their creativity by preparing charts and models based on their curriculum.
- PO5 Effective communication – Students learn to communicate through various electronic modes and express themselves effectively.

Programme Specific Outcomes (B.Sc. Botany)

- PSO1 Understand the basic concepts of Cell Biology, Microbiology, Genetics and Plant Breeding. PSO2 Understand the economic importance of plants and their uses for social welfare.
- PSO3 Identify the plants on the basis of taxonomic characters.
- PSO4 Write down the classification and characteristics of Algae, Fungi, Bryophyta, Pteridophyta, and Gymnosperms.
- PSO5 Identify plant diseases on the basis of their symptoms and learn control measures.
- PSO6- Understand applications of Molecular Biology and Biotechnology with respect to plants.
- PSO7- Understand morphology, anatomy, embryology and physiology of plants.
- PSO8- Understand basic concepts of ecology.
- PSO9- Learn laboratory and field experiments in the above mentioned fields of Botany.

Program Outcomes of M. Sc. Botany

- PO-1 Critical Thinking: Impart ability to formulate hypothesis and constraint condition for analyzing the situation, problem and arrive at an informed reasoned decision (intellectual, professional, social & personal) taking care of different perspectives.
- PO-2 Knowledge of Flora Understanding the climatic zone, plant classification and succession, identification and differentiation, different tools & techniques and the application of same in real world and chosen professional field.

- PO-3 Analysis and Interpretation Of finding generated through taxonomical, botanical, laboratory, gene culture, statistical studies and other tools & techniques used in subject.
- PO-4 Communication Skills Read, listen and understand the core idea/meaning of the received communication and clearly speak, write or communicate the thoughts, idea, reasons, findings etc. Ensure dispute resolution and team building for collaborative works.
- PO-5 Ethics: Understand the value system diversity and its acceptance. Awareness about ethics involved in study and research in different subjects. Know the regulatory framework such as biodiversity convention, biodiversity conservation, environmental and ecological frameworks etc.
- PO-6 Environment and Sustainability: Perception of environmental impacts and sustainability issues in plant diversity, assessment, conservation and economic utilization of floral resources.
- PO-7 Self-directed and Life-long Learning: Understand the need of and develop the ability to continual, unassisted, life-long learning in fast changing socio- technological developments.

Program Specific Outcome:

- PSO-1 Students understand classification, evolution & life cycle of lower to higher plants and their economic and ecological importance
- PSO-2 Knowledge about the cell, its structure, cell organelles & their functions
- PSO-3 Understanding of plant physiology & biochemistry, role of secondary metabolites, adaptation in plants in different stress conditions,
- PSO-4 Acquaintance about morphological, anatomical & reproductive characters of plants, identification of different plant families and their systematic
- PSO-5 To understand plant diseases & their control, microbiology.
- PSO-6 Gaining of knowledge about environment, plant ecology, traditional knowledge, herbal drugs.
- PSO-7 Understanding plant genetics & inheritance, plant tissue culture.

2. DEPARTMENT OF CHEMISTRY

Programme Outcomes (B.Sc. Chemistry)

- PO1 Explain, resolve and understand the all main concepts in various disciplines of chemistry.
- PO2 Resolve the difficulty in various reactions and also give methods and logical reason for various reactions
- PO3 Utilize the scientific skills to plan, perform and analyze the product of various chemical reactions.
- PO4 Make alertness about the effect of chemicals on the environment, society and surroundings

Programme Specific Outcomes (B.Sc. Chemistry)

- PSO1 Know about chemistry of various compounds through theoretical and practical skills
- PSO2 To give structure, reactivity of reactant, type of product yield and chemical reaction mechanism
- PSO3 Know about the molecular formula of various compounds
- PSO4 Use advance techniques, Charts and models Equipment
- PSO5 Explain the relationship between molecular structure and their reactivity
- PSO6 Know about various lab precautions and safety.
- PSO7 Gain research based knowledge, skills and operate the various chemistry based equipment.

M. Sc. Chemistry

Programme Outcomes

After successful completion of two year degree program in chemistry, a student should be able to:

- PO-1. Understand Stereochemistry and Bonding in Main Group Compounds.
- PO-2. Derive Electronic Spectra of Transition Metal Complexes
- PO-3. Get familiar with ORD and CD
- PO-4. Determine structure by using Microwave, Electronic and NMR Spectroscopy.
- PO-5. Learn about Nuclear and Radiochemistry.
- PO-6. Get a Review on Types of Reaction Mechanisms.

- PO-7. Learn about Quantum Chemistry, Electrochemistry and Surface Chemistry.
- PO-8. Learn about the potential uses of Analytical Techniques and Statistics.
- PO-9. Become professionally trained in the area of Industry, Material Science, Green Chemistry and Nano-Technology.
- PO-10. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of Chemistry experiments.
- PO-11. Demonstrate, solve and an understanding of major concepts in all disciplines of Chemistry.
- PO-12. Solve the problem and also think methodically, independently and draw a logical conclusion.
- PO-13. Create an awareness of the impact of chemistry on the society, and development outside the scientific community.
- PO-14. Become professionally trained in the area of Industry, material science, lasers and Nano-Technology.
- PO-15. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of Chemistry experiments.
- PO-16. To inculcate the scientific temperament in the students and outside the scientific community.
- PO-17. Apply modern methods of analysis to chemical systems in a laboratory setting.

Programme Specific Outcomes

- PSO-1. Learn basics of Metal Ligand Bonding
- PSO-2. Know the structure and bonding in molecules/ ions and predict the Structure of molecule/ions.
- PSO-3. Understand the various type of aliphatic, aromatic, nucleophilic substitution reaction.
- PSO-4. Understand and apply principles of Schrodinger Equations
- PSO-5. Learn the Familiar terms like Adsorption and Micelle.
- PSO-6. Understand good laboratory practices and safety.
- PSO-7. Carry out experiments in the area of organic analysis, estimation, separation, derivation process, conduct metric and potentiometric analysis.
- PSO-8. Understand Vibrational and Molecular Spectroscopy.
- PSO-9. Learns the basic concepts of NMR and Mossbauer Spectroscopy.

PSO-8. Study various analytical techniques like Conductometry, potentiometry, Coulometry and Atomic Absorption Spectroscopy.

PSO-9. Learn about nanomaterials, its synthesis and applications.

PSO-10. Study Solid state chemistry and superconductors.

PSO-11. Study the Quantum Mechanical aspects of chemical bonding.

PSO-12. Understand disconnection approach and ring synthesis.

PSO-13. Learn various extraction techniques for natural products.

PSO-14. Study the mode of action of drugs.

PSO-15. Learn about antibiotics, analgesics and antipyretics.

3. Department of Mathematics

Program Specific Outcomes

1. Bachelor's degree in mathematics is the culmination of in-depth knowledge of algebra, calculus, geometry, differential equations and several other branches of mathematics. This also leads to study of related areas like computer science and statistics. Thus, this programme helps learners in building a solid foundation for higher studies in mathematics.
2. The skills and knowledge gained has intrinsic beauty, which also leads to proficiency in analytical reasoning. This can be utilized in modelling and solving real life problems.
3. Students undergoing this program learn to logically question assertions, to recognize patterns and to distinguish between essential and irrelevant aspects of problems. They also share ideas and insights while seeking and benefitting from knowledge and insight of others. This helps them to learn behave responsibly in a rapidly changing interdependent society.
4. Students completing this program will be able to present mathematics clearly and precisely, make vague ideas precise by formulating them in the language of mathematics, describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non-mathematicians.
5. Completion of this program will also enable the learners to join teaching profession in primary and secondary schools.
6. Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.
7. Ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution.

8. Introduction to various courses like group theory, ring theory, field theory, metric spaces, number theory.
9. Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
10. Ability to pursue advanced studies and research in pure and applied mathematical science.
11. Understand, formulate and use quantitative models arising in social science, Business and other contexts.
12. Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given course.

4. Department of Physics

B.Sc. Physics Program Outcome (PO's)

A graduate of the B.Sc. (Physics) Program will be able to :

- PO1 Demonstrate a fundamental and systematic understanding of the core academic field of Physics
PO2 Explain the fundamental concepts behind the complex physical phenomenon.
- PO2 Apply critical thinking in framing assumptions and devising methodologies for countering any scientific problem.
- PO3 Formulate the solution to scientific problems with suitable data collection and graphical representation via selection of mathematical/statistical and experimental methods to draw valid conclusions.
- PO4 Write scientific report on procedure, formulation and analysis of relevant experimentation.
- PO5 Address one's own learning needs relating to current and emerging areas of study relating to Physics, making use of research, development and professional materials as appropriate, including those related to new frontiers of knowledge in Physics.

Program Specific Outcome:

A graduate of the B.Sc. (Physics) Program will be able to :

- PSO1 Demonstrate understanding of the basic concepts of relating to Optics, Electromagnetism, Mechanics, Thermodynamics, Electronics, Mathematical physics, Nuclear physics, Quantum mechanics, Solid state physics.

PSO2 Develop Critical thinking and problem solving capabilities.

PSO3 Demonstrate subject-related and transferable skills that are relevant to some of the Physics related jobs and employment opportunities.

5. Department of Zoology

Program Outcomes: Program Specific Outcomes

Zoology' the word is originated from the Greek language where "zoion" stands for animals and "logia" exemplifies for study, making zoology the science of animals. This branch of science deals not only with the morphological structures of animals but also with their behavioural aspects. Commencing from evolution, the classification, ecological distribution, embryology, physiology, habits or behaviour, and all other vital phenomena associated with the life events of living or even extinct animals are explored under the canopy of zoology.

During three year program in B.Sc. (Zoology) the students will able to:

- Develop a deeper understanding of zoological concepts at organism level.
- Describe the taxonomy and systematic study of animals both invertebrates and vertebrates, also interpret general evolutionary relationships among and between different animal groups.
- Get knowledge about the various animal habitats and their behaviour. Enable them to handle various scientific equipments and perform the laboratory experiments.
- Learn about the applied Zoology such as Sericulture, Apiculture, fisheries, Vermiculture etc. and use these techniques to develop as an entrepreneur.

As a zoologist, comprehensive knowledge of animal sciences, competence to perform the lab techniques as well as the propensity for fieldwork renders limitless avenues in the field of academics, government bodies and agricultural, environmental, or pharmaceutical industries .

Program Specific Outcomes:

- Understand the basic concepts of cell biology, invertebrates, vertebrates, genetics, taxonomy, physiology, biochemistry, evolution, ecology and applied Zoology.
- Able to perform various procedures as per laboratory standards.
- Applications of different methods used in Apiculture, Vermiculture, Sericulture, Aquaculture etc.
- A wider understanding of animal diversity, including knowledge of the scientific classification and evolutionary relationships of major groups of animals.
- Characterization of the biological, chemical, and physical features of environments (e.g., terrestrial, freshwater, marine).

