

PROGRAMME OUTCOMES

On completion of program students will be able to

PO1. **Think Critically** - Critical evaluation of ideas and arguments by collecting relevant information about the plants, so as to recognize their position in the classification systems and at phylogenetic level.

PO2. **Analyse and interpret results** generated through studies in botany, taxonomical treatments, field studies, excursion tours and laboratory techniques used in the subject.

PO3. Use **quantitative reasoning** by using mathematical calculations and graphing skills to solve problems in plant science and ecological data (Botany)

PO4. Students learn to carry out practical work, in the field and in the laboratory, interpreting plant morphology and anatomy, Plant identification, Vegetation analysis techniques.

PO5. Create, select, and apply appropriate techniques, resources, and modern instruments and equipment's for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological activities of plants with an understanding of the application and limitations.

PO6. Understand the relationship between science and society by recognizing and discussing logical, scientific and ethical issues in Botany subject.

PO7. **Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development with respect to assessment, conservation and utilization of floral diversity.

PO8. **Ethics:** Apply ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation.

PO9. development of scientific attitude, handling of problems and generating solution, improve practical skills

PO10. Understanding the nature and basic concepts of all the plant groups, their metabolism, components at the molecular level, biochemistry, taxonomy and ecology.

PO11. Students will be able to explain how Plants function at gene, genome, cellular and tissue level,

Programme Specific Outcomes (PSO):

PSO1. Students will be able to conceive the idea of artificial propagation of plants via vegetative methods and to find a livelihood via establishing miniature plant nurseries.

PSO2. Candidates can work as Plant explorer, conservationist, Ecologist, Genetics and Molecular Biologist, Taxonomist, Plant Pathologist, Nursery Manager, Environmental and Farming consultant.

PSO3. After B.Sc. Students opt for M.sc in Botany, M.sc in Life Science, Ph.D.

PSO4.prepare the students for many competitive exams like CGPSC, UPSC NET SET GATE

PSO5. Develop scientific temper and undertake scientific projects.

PSO6. Identify and classify plants according to the principles of plant systematics, apply techniques like plant propagation methods, organic farming, mushroom cultivation, preparation of biofertilizers, biopesticides etc. in daily life.

PSO7. The programme will motivate the students to take up the challenges of the Ph.D course and make them mentally prepare to excel in the respective field of their research work.

PSO 8. After completion of the course, students will gain the capacity to serve the various higher academic institutions like Colleges, Universities, National Research Institutes in various fields of apex academic research.

Course Outcomes (2023-24)

- Understand the viruses, bacteria, Phycology, Mycology and plant pathology.
- Learn microbial techniques which will be beneficial for agriculture and industry.
- Learn life cycles of selected genera of different groups.
- Understand etiology of plant disease .
- Apply their knowledge in the crop fields to eradicate or avoid the disease.
- Apply different biofertilizers to enhance productivity.
- understand the internal structure of Plants.
- Understand the general characteristics and affinities of bryophytes, Pteridophytes and gymnosperm.
- Phylogenetic relationship with the help of Paleobotanical studies.
- Learn morphology, flower architecture and family description of an angiospermic plants.
- Understand the plant taxonomy.
- Learn the characteristics of families included.
- Learn economic importance of different plants of the concerned families.
- Understand the traditional knowledge about the plants and possible application of this knowledge.
- Learn about the anomalous secondary growth of some plants.
- Understand the life cycle of angiospermic plants with details of microsporogenesis, megasporogenesis, fertilization and other developmental details up to embryogenesis.
- understand the relationship of Plant and Water, Diffusion, permeability, Osmosis, Imbibition, Plasmolysis, Osmotic potential and water potential, Types of soil water, Respiration, Photosynthesis and growth hormones.
- Learn and understand the handling of different techniques like Chromatography, Hot air oven, Incubator, Autoclave, Centrifuge, Spectrophotometer.
- Understand and role of Biomolecules, chemical composition, Structure of protein, carbohydrates, Lipid, Enzymes.

- Understand the Structure of DNA, RNA, Replication of DNA, mutation, operon model.
- understand the Cell and cell organelles, Mendelian and non-Mendelian inheritance, quantitative genetics, molecular markers and linkage mapping, prokaryotic and eukaryotic genome-structure, gene function and regulation, epigenetics, cytogenetics.