Department of Botany

Program Outcomes, Program Specific Outcomes, Course Outcomes,

Programme Outcomes:

PO1. Knowledge and understanding of plant diversity in terms of structure,function and environmental relationships.

PO2. The evaluation of plant diversity, classification and the flora of the surrounding area.

PO3. Knowledge to assess plant exploration, conservation and besides its importance for society health, safety and also its legal and environmental issues.

PO4. Understand the impact of the plant diversity in societal and environmental contexts and demonstrate the knowledge and need for sustainable development.

PO5.Students will be able to access the primary literature, identify relevant works for particular topic and evaluate the scientific content of these works.

PO6. Accurately interpretation of collected information and use taxonomical information to evaluate and formulate a position of plant in taxonomy.

PO7. Design solutions from medicinal plants for health problems, disorders and disease of human beings and estimate the phytochemical content of plants which meet the specified needs to appropriate consideration for the public health.

PO8. Students learn to carry out practical work, in the field and in the laboratory to - interpreting plant morphology and anatomy, plant identification, vegetation analysis techniques, range of physiochemical analyses of plant materials in the context of plant physiology and biochemistry.

PO9. Knowledge of Small and medium scale industries/units like –Floriculture, Nursery, Gardening , Sericulture, Vermicompost, Greenhouse, Glasshouse etc.

PO10.Transferable skills like use of IT (word-processing, use of internet, statistical packages and databases communication of scientific ideas in writing) and also to use library resources, time management, career planning .

PO11. Scientific knowledge in life sciences and fundamental metabolism of plants.

Program Specific Outcomes:

PSO1. Understand the scope and significance of the discipline.

PSO2. Understanding the classification of plants from Cryptogams to Spermatophyte.

PSO3. Students will be able to compare and contrast the characteristics of plants, algae, and fungi that differentiate them from each other and from other forms of life.

PSO4. Understand the ultra-structure and function of cell membranes, cell communications, genetics, anatomy, taxonomy, ecology and plant Physiology and biochemistry.

PSO5. Make them skilled in practical work, experiments, laboratory equipment and to interpret correctly on biological materials and data.

PSO6. Appreciate and apply ethical principles to biological science research and studies.

PSO7. Study of biodiversity in relation to habitat will correlates with climate change, land and forest degradation.

PSO8. Application of Botany in agriculture, Horticulture, Nursery, Gardening, Floriculture and Sericulture.

PSO9. Physiological adaptations in plants in response to biotic and abiotic stress.

PSO10.Students will be able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.

PSO11. Students will be able to access the primary literature, identify relevant works for a particular topic, and evaluate the scientific content of these works.

PSO12. Imbibe love and curiosity towards nature and natural resources .

PSO13. In order to make students open-minded and curious, we try our best to enhance and develop a scientific attitude.

PSO14. Develop a thirst to preserve the natural resources and environment.

PSO15. Develop the ability for the application of acquired knowledge in various fields of life so as to make our country self-sufficient.

Course Outcomes

1.Diversity of Microbes and Cryptogams

CO1.The students will get an understanding about the diversity of microbes.

CO2.They will learn the potentialities of microbes enhancing human welfare.

CO3.They will be enlightened about the role of microbes in ecological balancing of nature

CO4. The students will learn about the structure and reproduction of certain selected algae, fungi , bryophytes and pteridophytes.

CO5. They will know the economic values of this lower group of plant community.

CO6. learn few representatives of fossil forms.

CO7.Learn about the structure, pigmentation, food reserves and methods of reproduction of Algae,Fungi

CO8.Know about the Economic importance of algae, fungi, lichen, bryophytes and pteridophytes

CO9.Studied some plant diseases with special reference to the causative agents, symptoms, etiology and control measures.

CO10.Learn about the general characters and classification, stelar evolution in Pteridophytes, heterospory and origin of seed habit.

Characteristics and Systematics of Seed Plants

CO1.Know about the structure, life history and Economic importance of Gymnosperms.

CO2.Studied the methods of fossilization and fossil plants

CO3.The students are able to understand about Plant taxonomy and their systematic classification systems.

CO4.Learn about various Angiosperm families and its economic value.

CO5.Enlightened about the role of taxonomy in conservation of biodiversity

CO6. Learn the taxonomic evidences from molecular, numerical and chemicals.

Plant Anatomy, Embryology and Ecology

CO1.The students will learn about the basic concepts in Anatomy, Embryology and Ecology.
CO2. Understand the various components of stem and wood during its secondary growth.
CO3. Learn about double fertilization and their significance
CO4. Be enlightened about the sporogenesis and gametogenesis, mechanism of pollination and also basic structure and development of the embryos.
CO5.Learn the Approaches to the study of Ecology (Autecology, Synecology and Genecology)
CO6.Understand the population & Community Ecology

Plant Physiology and Metabolism

CO1.Discuss about absorption, translocation and utilization of water and other minerals.
CO2.Discuss the changes during growth process (germination to abscission).
CO3.Understand the energy flow and various metabolic cycles with their integration.
CO4. Describe an overall perception about various physiological processes occurring in plants.
CO5. Know about the basic principles of plant function, metabolism, secondary products.
CO6 Cell physiology & principles of growth & development.
CO7.Know about the requirement of mineral nutrition for plant growth.
CO8.Understand the process of Photosynthesis, Respiration, Nitrogen metabolism, Photoperiodism and Vernalization
CO9.Know about the Plant Growth hormones (Auxins, Gibberellins, Cytokinins, Ethylene)

Cell Biology and Genetics

CO1.Students will be able to understand the structure of cells in relation to the functional aspects.
CO2.To understand the difference between prokaryotic and eukaryotic cells.
CO3.To study the details of the plant cell wall, cytosol and cytoplasmic organelles.
CO4.To understands the properties of nucleic acids (DNA &RNA).
CO5. To study the details of protein synthesis and cell signalling.
CO6.Understand the basic concepts of Mendelian genetics, its variations and applications

Economic Botany and Biotechnology

CQ1. Brief studied the economic products with special reference to the Botanical name, family, morphology of useful part and the uses
CQ2. Concept of plant tissue culture techniques
CQ3. Basic understanding of the plant genetic transformation methods.
CQ4. Understand the basic knowledge about tissue culture tools, medium, sterilization and

techniques of tissue culture.

CQ5. Learn about the production of Synthetic seeds & significance

CQ6. Study about the role of tissue culture in crop improvement.

CQ7. Know about the morphogenesis and organogenesis in plants

CQ8. Recombinant DNA technology and the basic concepts of genome organization in plants and molecular markers

CQ9. Applications of Biotechnology in Plant, Animal and Human welfare

Mushroom Cultivation Technology

CQ1. The students will acquire sufficient academic and practical experiences and become self -employed in the mushroom and nursery ventures.

CQ2. be empowered with entrepreneurial skills through the production and disease management of mushrooms.

CQ3.The students will be strengthened to promote mushroom cultivation through good laboratory techniques.

CQ4.Provided with appropriate training personnel for the promotion of mushroom production in the college.

Nursery, Gardening and Floriculture

CQ1.The students will learn about how to prepare suitable soil media for potting up, seedling and cutting.

CQ2.Be able to impart the skills like germinating seed and transplant seedlings and cutting into pots.

CQ3.Understand the entrepreneurial skills in nursery technology

CQ4.Know the technique of medicinal gardening - Cultivation practices, marketing and utilization of selected medicinal plants

CQ5.Learn the importance of horticulture – career and occupational opportunities

CQ6.Learn the techniques of gardening - Types, Methods & Tools

Ethnobotany

CQ1. Explore and identify the vascular plant species inhabiting the area.

CQ2.To promote entrepreneurial and innovation skills among students and communities in the adjoining area.

CQ3.To inculcates a sense of familiarity from childhood with surrounding biodiversity and its conservation.

CQ4.To educate students in identifying different types of herbs and their uses including growing them in a garden.

CQ5.To popularizes the usefulness of commonly available and frequently used herbal plants and to conserve the associated traditional knowledge for future generations.

BIOFERTILIZERS

CQ1. Learn the characteristics, identification, cultural methods and maintenance of Azospirillum, Azotobacter, Azolla and Anabaena.

CQ2. Know about Mycorrhiza – VAM association, types, occurrence, collection, isolation and inoculum production.

CQ3.Studied the method of large scale production of biofertilizer & Organic farming

CQ4.Get knowledge on Biopesticides - characteristics, physiology, mechanism of action and application.

CQ5. Concept, methods and applicability of Vermicompost