

Department of Botany

B. Sc. (1st, 2nd, 3rd year) 01/11/2019 onwards

Programme outcome- This programme will enhance the knowledge of students in every field of botany. It will create the ability of students in dealing with societal and environmental issues, agriculture, ethics and healthcare. Students would be exposed to progressive technologies that are currently used in the study of plant life forms, their evolution and interactions with other organisms within the ecosystem.

B. Sc. Ist Year

Paper I (Algae, Fungi, Bacteria, Viruses and Lichens)

Course outcomes: After the completion of the course the students will be able to

- Basis of classification and types of habitats of Algae
- Concept of cyanophage
- Beneficial and harmful activities of algae
- General features and life cycles of representative algae of different classes as per syllabi
- Characteristic features & basis of classification of fungi
- Process of reproduction
- Evolution and importance of fungi
- General account and typed study of all representative genera from different classes of fungi as per syllabi.
- Characteristic features of Bacteria, basis of five kingdom classification
- Morphology of bacterial cells and viruses
- Role of microorganisms in different area.
- Structure, classification, importance & process of reproduction in Lichens.

Paper II (Bryophyte, Pteridophyte and Gymnosperms)

Course outcomes: After the completion of the course the students will be able to

- Characteristic features of bryophytes and Economic importance of bryophytes
- Classification and typed study of all representative genera from different groups as per syllabi.
- Origin and basis of classification of Pteridophytes, concept of heterospory and seed habit, stelar system, telome theory
- General account and typed study of representative genera from different classes as per syllabi.
- Understand basis of classification of gymnosperms in detail
- General account and life cycle of representative genera of different classes as per syllabi
- Study of palaeobotany

B. Sc. 2nd Year

Paper 1 (Taxonomy, Plant Anatomy and Embryology)

Course outcomes: After the completion of the course the students will be able to

- Discuss the Principles of taxonomy and major systems of classification mainly Bentham and Hooker, Hutchinson and Takhtajan
- Describe ICBN, Plant exploration, Taxonomic tools, Concepts of Phytogeography
- Distinguish important families described in the syllabus
- Describe shoot and root Development
- Define general account of plant tissues, root, shoot and leaf anatomy
- Understand and describe anomalous secondary growth in genera described in the syllabus
- Describe development of male and female gametophyte
- Describe pollination, pollen pistil interaction and fertilization
- Describe detailed account of seed development, fruit growth and dormancy

Paper II (Cytogenetics, Plant Breeding and Biotechnology)

Course outcomes: After the completion of the course the students will be able to

- Apply the concepts of Mendelian genetics to solve problems on linkage, crossing over and gene mapping.
- Analyze human pedigree and apply the principles of population genetics to work out problems on genotype frequency and Hardy-Weinberg equilibrium. Understand the Chromosomal aberrations and their role in genome evolution with special reference to crop plants.
- Understand modern breeding methods in improving agricultural crop varieties.
- Understand the process of cell cycle its regulation and the mechanism of apoptosis.
- Principle and scope of biotechnology
- Concept of plant cell and tissue culture
- Industrial biotechnology
- Role of microorganisms in Biotechnology

B. Sc. 3rd Year

Paper 1 (Plant Physiology, Morphogenesis and Biochemistry)

Course outcomes: After the completion of the course the students will be able to

- Mechanism of water transport
- Enzymes, Michaelis – Menten equation
- Photosynthesis
- Respiration – Glycolysis etc, PPP
- General concept of morphogenesis
- Plant growth movements
- Plant growth regulators
- Photoperiodism and Vernalization
- Carbohydrate, Lipids, Alkaloids.

Paper 2nd (Ecology, biostatistics and Economic Botany)

- Acquaint the students with complex interrelationship between organisms and environment;
- Make them understand methods for studying vegetation, community patterns and processes, ecosystem functions, and principles of phytogeography.
- Understanding the strategies for sustainable natural resource management and biodiversity conservation.
- Practical knowledge of the different statistics tools and techniques.
- Know about the importance of medicinal plants and its useful parts, economically important plants in our daily life and also about the traditional medicines and herbs, and its relevance in modern times.