

## **B.Sc. Botany program outcomes, Program specific outcomes, Course outcomes**

### **Program outcomes**

**PO1.** Become aware of applications of different plants in various industries.

**PO2.** 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.

**PO3.** Understanding the role of plants in the functioning of the global ecosystem.

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

### **Program specific outcomes**

**PO1.** Understand the nature and basic concepts of cell biology, Biochemistry, Taxonomy and ecology.

**PO2.** Understand the nature and basic concepts of cell biology, Biochemistry, Taxonomy and ecology.

**PO3.** Analyse the relationships among animals, plants and microbes

**PO4.** To understand the different types of genetic interaction, incomplete dominance, codominance, inter allelic genetic interactions, multiple alleles and quantitative inheritance etc.

**PO5.** Know the taxonomic position, occurrence, thallus structure, reproduction of Bryophytes.

## DEPARTMENT OF BOTANY

### F.Y.B.Sc Botany

#### **Paper I: Plant Diversity and Morphology & Anatomy**

- CO1- Student can identify the different location of the algae.
- CO2- Explain their habitat, cell structure, pigments, and reserve food found in them.
- CO3- Student can Understand Distinguish between the different forms of algae with example.
- CO4- Student can know the benefits and Harmful effects of Fungi.
- CO5- Understand the parts of a Microscope and its working.

#### **Paper II: INDUSTRIAL BOTANY I & INDUSTRIAL BOTANY II**

- CO1- To prepare the students to accept the challenges in life sciences.
- CO2- To develop skills required in various industries, research labs and in the field of agriculture, food, human health.
- CO3- To expose the students to various emerging areas of Biotechnology.
- CO4- To prepare students for further studies, helping in their bright career in the subject.

## DEPARTMENT OF BOTANY

### S.Y.B.Sc Botany

#### **Paper I: PLANT MORPHOLOGY AND TAXONOMY / PLANT ANATOMY AND EMBRYOLOGY**

- CO1- : Students will be able to present scientific hypotheses and data both orally and in writing in the formats that are used by practicing scientists.
- CO2- To prepare the students to accept the challenges in life sciences.
- CO3- Students can understand the difference between classification Nomenclature and Identification.
- CO4- To make the students knowledgeable with respect to the subject and its practicable applicability.

**Paper II: PLANT PHYSIOLOGY AND BIOTECHNOLOGY**

CO1- To promote understanding of basic and advanced concepts in Biotechnology.

CO2- exposes the students to various emerging areas of Biotechnology.

CO3- To prepare students for further studies, helping in their bright career in the subject.

CO4- The students are familiarized with basic aspects with subjects required to study biotechnology.

## DEPARTMENT OF BOTANY

### T.Y.B.Sc Botany

#### SEMESTER I

##### **Paper I: CRYPTOGAMIC BOTANY**

C01- Students will be able to use the evidence of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of life on earth.

C02- Students will be able to explain the ecological interconnectedness of life on earth by tracing energy and nutrient flow through the environment.

C03- Learn about the characters of biologically important families of angiosperms.

C04- Know the floral variations in angiospermic families, their phylogeny and evolution.

##### **Paper II: CELL AND MOLECULAR BIOLOGY**

C01-The study of biochemistry helps to understand the chemical concepts of biology. It helps to enhance the functioning of various body processes and physiology by uses of bio-molecules.

C02-Gain knowledge about the mechanism and essential component required for prokaryotic DNA replication.

C03- Understand the fundamentals of Recombinant DNA Technology.

##### **Paper III: GENETICS AND EVOLUTION**

C01-Genetics is a prerequisite for cell and molecular biology and useful in the overall study of genetic engineering

C02-Understand the biochemical nature of nucleic acids, their role in living systems, experimental evidences to prove DNA as a genetic material.

C03-Understand the process of synthesis of proteins and role of genetic code in polypeptide

##### **Paper IV: SPERMATOPHYTA AND PALEOBOTANY**

C01-Know the systematic, morphology and structure, of Algae

C02-Understand the life cycle pattern of Algae

C03- Understand the useful and harmful activities of Algae

CO4-Know the Economic Importance of Fungi

CO5-Understand the morphological diversity of Bryophytes.

### **Paper V: HORTICULTURE AND FLORICULTURE**

CO1-Understand the science of plant breeding. 2

CO2-To introduce the student with branch of plant breeding for the survival of human being from starvation. 3.

CO3-To study the techniques of production of new superior crop varieties.

CO4-. Understand the modern strategies applied in Genetics and Plant Breeding to sequence and analyze genomes

### **Paper VI: COMPUTATIONAL BOTANY**

CO1-The students get familiar to handle computer and manage database for better results

CO2-To study the knowledge about the statistical problems based on plant yielding data

### **SEMESTER II:**

#### **Paper I: PLANT PHYSIOLOGY & BIOCHEMISTRY**

CO1-An important field of basic science explaining the molecular function of a plant, but is also an applied science that is in the position to contribute to the solution

CO2-To study about the chemical present in plants and knowledge about the metabolic functions .

#### **Paper II: PLANT ECOLOGY & BIODIVERSITY**

CO1-Useful for the understanding of ecological concepts as well as the ability to apply ecological knowledge to manage and remediate environmental problems.

CO2-To study the ecological adaptation of plants in presence of climatic condition

#### **Paper III: PLANT PATHOLOGY**

CO1-Understand the concept, principle and types of sterilization methods.

CO2-Know the concept and characteristics of antiseptic, disinfectant and their mode of action.

CO3- Know the cultivation methods of bacteria, yeast, fungi and virus.

CO4- Principle, working and applications of instruments viz, pH meters, spectrophotometer,

#### **Paper IV: MEDICINAL AND ECONOMIC BOTANY**

CO1-Students will be able to conduct self-evaluation, and continuously enrich themselves through lifelong learning.

CO2-To study the knowledge about the preparation of drugs.

CO3- To study the knowledge about the medicinal plants.

#### **Paper V: PLANT BIOTECHNOLOGY**

CO1- Students are prepared for a plant biotechnology with the help of basics in plant science.

CO2- To prepare students for further studies, helping in their bright career in the subject.

CO3- The students are familiarized with basic aspects with subjects required to study biotechnology.

#### **Paper VI: PLANT BREEDING & SEED TECHNOLOGY**

CO1-Understand the science of plant breeding.

CO2-To introduce the student with branch of plant breeding for the survival of human being from starvation.

CO3-starvation. To study the techniques of production of new superior crop varieties.

CO4-Understand the modern strategies applied in Genetics and Plant Breeding to sequence and analyze genomes.