DEPARTMENT OF BOTANY – UG

PROGRAMME OUTCOMES

- **The student will be able to identify major groups of plants and compare the characteristics of lower (e.g. algae and fungi) and higher (angiosperms and gymnosperms) plants.**
- **To gain knowledge in the evaluation of plant diversity.**
- **To gain knowledge in Plant classification**

COURSE OUTCOMES

I Semester

INTRODUCTION TO CLASSICAL BIOLOGY

The student will be able to learn the diversity and classification of living organisms and understand their chemical, cytological, evolutionary and genetic principles.

I Semester

Course: 2 INTRODUCTION TO APPLIED BIOLOGY

The student will be able to learn the foundations and principles of microbiology, immunology, biochemistry, biotechnology, analytical tools, quantitative methods, and bioinformatics.

II Semester

Course 3: Non-Vascular Plants (Algae, Fungi, Lichens and Bryophytes)

1. To realize the characteristics and diversity of non-vascular plants.
2. To recognize the ecological and economic value of algae, fungi, lichens and bryophytes.
3. To inquire the habit, habitat, morphological features and life cycles of selected genera of non-vascular plants.

II Semester

Course 4: Origin of Life and Diversity of Microbes

1. To get awareness on origin and evolution of life.
2. To understand the diversity of microbial organisms.
3. To get awareness on importance of microbes in nature and agriculture.

III Semester

Course 5 : Vascular Plants (Pteridophytes, Gymnosperms and Taxonomy of Angiosperms)

1. To recognize the morphology, anatomy and reproduction in two groups of archegoniates.
2. To acquire knowledge of the taxonomic aids and classification systems.
3. To read the vegetative and floral characteristics of some forms of angiospermic families along with their economic value.
4. To study the significance of other branches of botany in relation to plant taxonomy.

III Semester

Course 6: Plant Pathology and Plant Diseases

1. To study various plant pathogens, their survival and dispersal mechanisms.
2. To understand the processes involved in infection and pathogenesis in plants.
3. To study the common diseases of some important field and horticultural crops.

III Semester

Course 7: Plant Breeding

1. To learn the objectives and scope of plant breeding along with reproductive methods in plants.
2. To understand the breeding methods in plant for production of new varieties.
3. To have a comprehensive knowledge on tools and techniques in plant breeding.

III Semester

Course 8: Plant Biotechnology

1. To acquire knowledge of sterilization techniques used in plant tissue culture.
2. To learn about various types of plant tissue culture practices.
3. To know the applications of plant biotechnology in production of novel plants.

IV Semester

Course 9: Anatomy and Embryology of Angiosperms

1. To know about various types of tissues in plants and their organization.
2. To obtain awareness on anomalous secondary growth in plants and economic value of woods.
3. To acquire knowledge on development of male and female gametophytes in plants.
4. To probe into embryogenesis in angiosperms.

IV Semester

Course 10: Plant Ecology, Biodiversity and Phytogeography

1. To figure-out the components of ecosystem and energy flow among different trophic levels.
2. To apprise the characteristics of autecology and synecology.
3. To understand the climatic change and associated impacts on biotic components.
4. To discern the value of biodiversity, threats and conservation strategies.
5. To know the distribution of various plant groups in different geographical areas.

IV Semester

Course 11: Plant Resources and Utilization

1. To know different plants domesticated by humans and utility of their products.
2. To gain knowledge on commercial and timber products obtained from plants.
3. To know the facts on economic value of plants products in relation to human welfare.

V Semester

Course 12: Cell Biology and Genetics

1. To look into the ultra-structure of plant cell and its organelle
2. To know the morphology and functions of chromosomes
3. To understand the principles of genetics, structure and functions of gene

V Semester

Course13: Plant Physiology and Metabolism

1. To understand the concept of Soil-Plant-Atmosphere continuum based on plant-water relations.
2. To study the anabolic and catabolic processes in plants.
3. To understand the role of plant growth regulators on growth, development and flowering.

V Semester

Course 14 A: Organic Farming

1. To know the beneficial aspects of organic farming against chemical farming.
2. To gain knowledge about soil fertility, organic pest and disease management strategies.
3. To understand the organic certification process, including the standards and regulations that govern organic farming practices.

V Semester

Course 14 B: Seed Technology

1. To understand the factors responsible for seed dormancy and procedures for break-down.
2. To learn the aspects of seed processing and storage.
3. To acquaint with various practices in seed testing and diagnosis of seed borne diseases.

V Semester

Course 15 A: Mushroom Culture Technology

1. To learn about the morphology and nutritional value of some edible mushrooms.
2. To gain knowledge on basic requirements for establishing a mushroom culture unit.
3. To learn the cultivation methods and management practices specific to certain edible mushrooms.

V Semester

Course 15 B: Plant Propagation Techniques

1. To gain knowledge on asexual propagation methods in plants.
2. To understand the principles pertaining to various vegetative propagation methods.
3. To know the specific propagation method that is applied to a particular species.