M. SC –BOTANY

COURSE OUTCOMES

Semester I

COURSE

C-I -Biology and Diversity of Algae and Fungi

- Understanding of thallus organization of algae and fungi and their salient features.
- Knowledge of different kinds of algal, fungal, lichen diversity and their economic implications.

C-II -Biology and Diversity of Microbes and Plant Pathogens

- Familiarization with methods of microbiology, development of theoretical and technical skills of basic microbiology (sterilize, isolate, culture, preserve microbes), the structure of bacteria and viruses.
- Understanding of the host pathogen interaction and common plant diseases.

C-III -Biology and Diversity of Bryophytes and Pteridophytes

- Knowledge about the morphological, anatomical and developmental patterns in bryophytes and pteridophytes.
- Understanding of their reproductive parts development and mechanism of reproduction.

C-IV –Plant resource utilization and Breeding

- Understanding the core concepts of economic botany and relate with environment, populations, communities, and ecosystems.
- Appreciation of the diversity of plants and the plant products in human use.
- Acquaintance with the experimental steps and methods involved in generating new varieties using classical and contemporary breeding practices.

Semester -II

COURSE

C-V -Cell and Molecular Biology

- Development of strong fundamental basics for molecular studies like the structure and function of the protein and nucleic acid, DNA organization and its packaging.
- Enumeration and appreciation of cell theory, ultrastructure and chemical composition of the cell, cell cycle, apoptosis, and its control mechanism.

C-VI- Biostatistics and Computer Applications

- Recognition of the importance and value of statistical tools and approach to problem-solving.
- Detailed view of the visualizing concepts and techniques of computers.

C-VII- Biology and Diversity of Gymnosperms

- Understanding of evolutionary tendencies and comparative morphology of cycadales, cycadeodales and pteridospermales.
- Comparision among the characters of different orders & relationship of each order and differentiation of the characters of orders of Gymnosperms i.e., cycadales Ginkogales, Coniferales, and Taxales.

C-VIII- Biology and Diversity of Angiosperms-I

- Gaining in-depth knowledge of salient features of angiosperms, concept of origin and evolution of angiosperms.
- Understanding various systems of classifications and detailed studies on commonly growing plant families.

Semester –III

Course

C-IX- Cytogenetics and Evolution

- Understanding of mutations, transposons, epigenetics, epigenomics, human genetic diseases.
- Conceptualization of Mendelian genetics, sex determination and extranuclear inheritance
- Understanding the evolutionary trends through the study of evolution and the evolutionary diversification of early land plants and morphological and reproductive innovations.

C-X- Immunology and Biotechnology

- Demonstration of basic knowledge of immunological processes at cellular and molecular level, antigen-antibody reactions and allergy.
- Comprehensive understanding of the principles and practices of biotechnology

C-XI- Biology and Diversity of Angiosperms-II

- Realization of the origin of angiosperms.
- Understanding various angiosperm families by emphasizing their morphology, distinctive features and biology.
- Development of taxonomic tools in plants systematic and knowing the role of anatomy, cytology and phytochemistry.

C-XII- Plant Physiology

- Familiarization with various physiological aspects involved in the plant development and mechanism of photosynthesis, respiration, and nitrogen and lipid metabolism.
- Qualitative and quantification analysis of the plant contents and their biochemical properties.

Semester –IV

C-XIII- Biochemistry

- Acquaintance with the energy transduction mechanism and biochemical energetics in plants.
- Understanding of enzymes, their structure, role and properties.
- Identification of carbohydrates, lipids, proteins, nucleic acids and various techniques used for the separation of amino acids and plant secondary metabolites.

C-XIV- Ecology

- Comprehensive knowledge of various types of ecosystems and correlation different ecosystems and analyzes the threat and suggests conservative measures.
- Analysis of various physical, chemical and biological properties of soil, water and air.

C-XV- Special Paper (Biodiversity, Bioprospecting, Ethnobotany and Sustainable Utilization of Plant Resources

- Acquaintance with the concepts of biodiversity, their types, patterns, loss, conservation and its importance
- Understanding and appreciation of diversity of plants and the plant products in human use and understand the concept of IPR, various legal issues related to IPR.
- Development of basic knowledge of plant conservation and propagation of economically important and endangered plants.