

COURSE OUTCOME

Core Course I. BOT1B01T - Angiosperm Anatomy

- To understand the scope and importance of the application of anatomy
- To develop an idea about the structure of plant cells and its contents and roles
- To know about the secretory and excretory materials in plants
- To know various tissues, tissue systems and their roles in plants
- To understand the primary structure, normal and anomalous secondary growth of stem and roots

Core Course II. BOT2B02T Research Methodology & Microtechnique

- To critically analyze the steps in scientific methods, observations made, formulations and experimental design and their testing
- To utilize the data obtained from various sources, analyze and use it for designing new ideas and theories
- To measure any statistical data in terms of central tendency, dispersion and evaluate the correlation by regression
- To apply the laws of probability in analyzing various statistical data, develop skill in designing experiments and testing hypothesis
- To be familiar with the basic laboratory skills, microscopy techniques and various steps of microtechnique.

Core Course III. BOT3B03T Microbiology, Mycology, Lichenology & Plant Pathology

- To know the systematic, morphology, structure, uses and culturing of bacteria and viruses
- To understand the systematics, morphology and economic importance of fungal classes giving stress on important type specimens
- To understand the features and importance of lichens.
- To know more about plant diseases- causatives, symptoms and control measures with special reference to frequently seen diseases in crops of South India

Core Course IV. BOT4B04T - Phycology, Bryology & Pteridology

- To study the biodiversity of algae systematically and understand their phylogeny and life patterns
- To understand the morphological diversity, evolution, economic importance of Bryophytes and Pteridophytes with special importance to the major types

Core Course V. BOT5B05T - Gymnosperms, Palaeobotany, Phytogeography & Evolution

- To understand the general characters of gymnosperm and evaluate various features like anatomy, reproduction, lifecycle, affinities and economic importance of major members

- To understand the various phases in geological time scale and the types of plants dominating in each phase
- To know more about fossil formation, its exploration and economic importance
- To understand the scope and importance of Palaeobotanical research in India, Indian Palaeobotanists and research institutes
- To know about the phytogeographical zones of India and the world and the factors which lead to the specific vegetation
- To understand the various theories and concepts regarding the mechanism behind the evolution of earth and living organisms in it

Core Course VI. BOT5B06T - Angiosperm Morphology & Plant Systematics

- To make the students understand more about the diversity in the morphology of the vegetative and reproductive parts of angiospermic plants
- Familiarize the taxonomic analysis of angiosperms with special reference to the important families
- To understand the classical and modern trends in the study of taxonomy including plant identification, collection and preservation
- To familiarize various taxonomic literature and information resources across the world

Core Course VII. BOT5B07T - Embryology, Palynology, Economic Botany, Ethnobotany & Horticulture

- To understand the finer details regarding fertilization, endosperm development, and embryogeny in plants structure and development of a flower, microsporangium and ovule
- To understand the scope, importance and application of pollen morphology, pollen structure, mechanism of pollination and pollen storage.
- To understand the roles of plants in human welfare giving special reference to the taxonomical details of economically important plants.
- To learn and understand about the major tribes of South India and the ethnobotanical importance of selected plants
- To understand and familiarize the horticultural practices and activities of large scale plant production.
- To familiarize the students with various garden techniques like indoor gardening, Bonsai culture, landscaping, anthurium and mushroom cultivation.

Core Course VIII. BOT5B08T - General & Bioinformatics, Introductory Biotechnology, Molecular Biology

- To familiarize the features, applications and scope of general informatics and its impact on people and society
- Storage, retrieval and handling of biological data in modern database; features, applications and working of various biological databases, molecular docking software, drug designing, etc.
- Importance and details of proteomics and genomics
- Structure, importance, history and features of nucleic acid molecules like DNA, RNA, etc.

- To know more detailed about the genetic code, gene action, central dogma, gene regulation, mutation in prokaryotes and eukaryotes
- To understand more about the characteristics, techniques, principles and application of plant tissue culture and biotechnology in different walks of life such as medicine, agriculture, industry, environment and forensic studies.

OPEN Course. BOT5BD02 - Choice II - Applied Botany

- To understand more about plant propagation techniques by seeds, cutting, grafting, budding, layering and micro propagation
- To understand more on various steps in plant culture and grooming
- To study the aspects of gardening techniques of vegetables, anthurium, orchid, Bonsai, bio fertilizers and vermicomposting.
- To familiarize various economically important crops, their binomial name, family, useful morphological part, etc.

Core Course IX. BOT6B09T - Genetics & Plant Breeding

- Students should be clear about the classical Mendelian genetics, modified Mendelian theories like allelic and gene interactions including epistasis, complementary genes, multiple alleles, quantitative inheritance, etc.
- The students should understand the mechanism of linkage and crossing over, chromosome mapping, sex determination in various organisms, sex linked inheritance, nuclear inheritance, population genetics, etc.
- To understand different breeding techniques by understanding the importance of these.
- Application of modern amenities for the process like the use of genetic engineering, mutation breeding, heterosis breeding and breeding for resistance

Core Course X. BOT6B10T - Plant Physiology & Metabolism

- The students should learn the characteristic features of water which helps in the biological systems, transpiration types, features and mechanisms.
- To understand the processes related to the ascent of sap, uptake of nutrients and translocation of sugars.
- To study more about photosynthesis- (apparatus, process, regulation and assimilatory powers), Nitrogen fixation- (sites, genetic control and assimilation), etc.
- To know more on the role of phytohormones in plant growth, development, movement (types and feature), photomorphogenesis, seed germination and seed dormancy.
- The students should learn the metabolic reactions of body like catabolism of hexose sugars, oxidation of fatty acids and amino acids, synthesis of saturated fatty acids, and components and functioning of oxidative phosphorylation.

Course XI. BOT6B11T CORE - Cell Biology & Biochemistry

- The students should understand more about the architecture of the cells, structure and function of all the cell organelles, chromosomes, cell division – stages and regulation of mitosis and meiosis.
- To understand the structural and numerical aberrations in chromosomes

- To learn detailed about macromolecules in biological systems like carbohydrates, lipids, amino acids, proteins, nucleotides and secondary metabolites
- To study the classification, action, structure, regulation, inhibition of enzymes.

Core Course XII. BOT6B12T - Environmental Science

- To know more about ecosystem, food chain, food web, biogeochemical cycles of Nitrogen, Phosphorous and Carbon
- Ecological adaptations of halophytes, xerophytes, hydrophytes, epiphytes and parasites.
- To familiarize with the conservation of biodiversity, threats to biodiversity, and organizations taking part in biodiversity conservation
- To know more about various types of pollution, global changes in environment and mechanism to prevent this dangerous threat
- Ecosystem of biosphere and techniques in plant community studies

ELECTIVE - Choice III. BOT6B015T - Advanced Plant Systematics

- Importance, history, scope and modern techniques of taxonomy.
- To know more about taxonomic characters and its sources, plant identification procedures like herbarium, taxonomic literature, botanical gardens and digital resources in taxonomy like softwares, online tools, databases, etc.
- Plant nomenclature- history, features, rules, etc.
- Critical study of selected plant families with emphasis on their identification, economic importance, interrelationships and evolutionary trends