COURSE OUTCOME

SEMESTER I

BOT1B01T: ANGIOSPERM ANATOMY

- Understand the structure of plant cell and non-living cell inclusions
- Comparative analysis of various types of tissues in plants
- Gain the knowledge of vascular tissues in monocot and dicot plants
- Differentiate the normal, extra-stelar and anomalous secondary growth in plants

SEMESTER II

BOT2B02T: RESEARCH METHODOLOGY AND MICROTECHNIQUE

- Understand the competence in research approaches
- Impart knowledge about data collection, interpretation and deduction of data, research report writing and data presentation
- Develop the concept about the measures of central tendency, measures of dispersion, probability, test of hypothesis and experiment designing
- Understand different biophysical techniques
- Collect the knowledge about microscopy and micrometry
- Understand the procedure of permanent slide preparation

SEMESTER III

BOT3B03T: MICROBIOLOGY, MYCOLOGY, LICHENOLOGY AND PLANT PATHOLOGY

- Understand the various aspects of micro-organisms.
- Familiarize their ecological and economic importance and various culture techniques.
- Study different classification systems in fungi and their major features.

- Develop an idea about various plant diseases, symptoms and managing measures.
- Brief account on common plant diseases.
- Identification of the diseases, pathogen, symptoms and control measures of common plant diseases.

SEMESTER IV

BOT4B04T: PHYCOLOGY, BRYOLOGY, PTERIDOLOGY

- Acquire knowledge on general characters, classification systems, phylogenetic patterns and economic importance of algae, bryophytes and pteridophytes.

SEMESTER V

BOT5B05T: GYMNOSPERMS, PALAEOBOTANY, PHYTOGEOGRAPHY & EVOLUTION

- Study general characters, classification, distribution and other major aspects of gymnosperms.
- Know the evolutionary trends and economic importance of the group.
- Understand the basic and applied aspects of fossil plants.
- Study relation between different plant distribution patterns and topography.
- Understand evolution and various theories.
- Emphasize on evolutionary processes and subsequent changes in flora

BOT5B06T: ANGIOSPERM MORPHOLOGY AND SYSTEMATICS

- To know about stem, root and leaf modifications
- Identify and describe different inflorescence types in plants
- Understand the concept that ‘flower is a modified shoot’
- Know about different types of fruits and seedsalong with the adaptations for dispersal
- Familiarize the components and development of plant systematics
- Understand different systems of plant classification
- Study the salient features of different monocot and dicot families
- Know the contributions of eminent taxonomists

- Develop a better knowledge on plant nomenclature and key preparation
- Describe the steps of herbarium preparation and maintenance
- Familiarize different international herbarium types

BOT5B07T:EMBRYOLOGY, PALYNOLOGY, ECONOMIC BOTANY, ETHNOBOTANY, HORTICULTURE

- Know about anther and ovule structure, gametogenesis and fertilization
- Study the types of endosperm, embryo and polyembryony
- Describe different types of polyembryony
- Study on pollen morphology and acetolysis procedure
- Describe different aspects of applied palynology
- Familiarize the different types and mechanisms of pollination
- Study the binomial, family and morphology useful part of cereals, pulses, sugar, fruits, vegetables, ornamental plants, timbers, fibres, spices, medicinal plants, oil seeds and latex
- Understand major tribes of South India and ethnobotanic significance of medicinal plants
- Provide better knowledge about the soil components, fertilizers and irrigation methods
- Demonstrate different vegetative propagation methods
- Develop the clear idea about the gardening methods
- Study the different stages of mushroom cultivation

BOT5B08T:GENERAL AND BIOINFORMATICS, INTRODUCTORY BIOTECHNOLOGY AND MOLECULAR BIOLOGY

- Understand the application of information technology in plant biology
- Study the relationship of information technology and society
- Know about the cyber ethics
- Study the genomics, proteomics and genome projects
- Understand the role of IT in phylogenic tree construction and drug design
- Provide the elaborated information about genetic code, DNA and RNA
- Provide the exact knowledge of central dogma of protein synthesis
- Demonstrate the steps of *invitro*micropropagation of desired plants
- Develop the different aspects of tissue culture methods
- Understand the *invitro* secondary metabolic production using bioreactors
- Study the application of biotechnology in medicine, agriculture, industry and forensics

BOT5D02: OPEN COURSE – APPLIED BOTANY

- Describe different vegetative propagation and micro propagation methods in plants
- Gain knowledge about different steps of growing plants
- Understand the role of botany in everyday life
- Study the binomial, family and morphology of useful part of the cereals, pulses, timbers, spices, fruits, ornamental plants etc.

SEMESTER VI

BOT6B09T: GENETICS AND PLANT BREEDING

- Develop the idea of Mendelian experiments and ratios
- Understand the modified Mendelian ratios
- Make correct knowledge about quantitative inheritance
- Describe the types of linkage and crossing over
- Understand the sex determination mechanism in plants and animals
- Study the sex linked inheritance and extranuclear inheritance
- Collect the knowledge of population genetics
- Study different breeding techniques in plants
- Know about different modern tools for plant breeding

BOT6B10T: PHYSIOLOGY AND METABOLISM

- Understand the relationship between plant cell and water
- Know about the transpiration mechanism in plants
- Study the different pathways of inorganic nutrient absorption in plants
- Comprehend the knowledge of photosynthesis in higher plants
- Know about biological nitrogen fixation in plants
- Describe mechanisms of translocation and distribution of photo assimilates in plants
- Understand the different phytohormones and their role in plants
- Know about different plant movements by light, gravity, mechanical force etc.

- Describe different biomolecules and its role in metabolism
- Familiarize the intermediary metabolic pathways in plants

BOT6B11T: CELL BIOLOGYAND BIOCHEMISTRY

- Know the structure and function of cell organelles
- Understand and identify the different types of chromosomes
- Study the different stages of mitosis and meiosis in plant cells
- Comprehend the knowledge of chromosomal aberrations
- Understand the macromolecules as building block of biomolecules
- Study the structure and function of carbohydrates, lipids, proteins and nucleotides
- Understand the enzyme catalysis mechanisms during metabolism

BOT6B12T: ENVIRONMENTAL SCIENCE

- Understand the ecosystem and different biogeochemical cycles
- Describe the ecological adaptations of plants grown in different environmental conditions
- Acquire the knowledge about biodiversity conservation
- Comprehend different types of pollution and its management
- Understand and explain the major ecosystems of biosphere
- Gain knowledge of patterns of plant distribution
- Identify the phytogeographical zone of India
- Acquire the knowledge of continental drift and theory of land bridges
- Study the origin of earth and evolution of prokaryotic and eukaryotic cells
- Develop the idea of theories of evolution
- Familiarize the knowledge of speciation and origin of species

BOT6B13T: ELECTIVE PAPER – GENETIC ENGINEERING

- Understand the protocol of DNA / RNA isolation and purification from plant tissues
- Study ‘how can separate DNA / RNA through gel electrophoresis method
- Know different blotting techniques in molecular biology
- Familiarize different cloning vectors which are used in recombinant DNA technology
- Develop correct knowledge about steps of rDNA technology
- Understand different genetically modified crop plants and animals