

DEPARTMENT OF BOTANY

B.Sc BOTANY- 2021 SYLLABUS ONWARDS

PAPER WISE COURSE OUTCOMES

SEMESTER-I

COURSECODE: U21BOT11 **SUBJECT:** ALGAE, FUNGI AND LICHENS-CORE- I

COURSE OUTCOMES:

CO1-understand the general features and classification of algae

CO2-enumerate the life cycle of major classes of algae and their economic importance

CO3-acquire a deep knowledge on principles of fungi classification to apply in the field

CO4-know the life cycle of major classes of fungi and their economic importance

CO5-have clear idea about lichens including their economic importance

SEMESTER-II

COURSECODE:U21BOT21

SUBJECT: BRYOPHYTES,PTERIDOPHYTESGYMNOSPERM AND PALEOBOTANY-CORE- III

COURSE OUTCOMES:

CO1- have a clear idea about the characters and life cycle of Bryophytes and their economic importance

CO2-describe the features and life cycle of Pteridophytes

CO3- understand the stellar evolution and economic potential of Pteridophytes

CO4-gain knowledge on features, classification, life cycle and economic importance of Gymnosperms

CO5-have better understanding on fossilization process and fossil plants



SEMESTER III

COURSECODE:U21BOT31

SUBJECT:CELL AND MOLECULAR BIOLOGY-CORE –V

COURSE OUTCOMES:

CO1-understand the organization of Plant cell, cell wall and its Membrane

CO2-describe the structure and role of cell organelles

CO3- know the stages and types of cell divisions

CO4- know the organization and structure of plant genetic material

CO5-differentiate the prokaryotic and eukaryotic gene regulation

COURSECODE:U21BOE311 SUBJECT: BIOPROSPECTING OF PLANTS -ELECTIVE –I

COURSE OUTCOMES:

CO1-comprehend the basic concepts of bioprospecting

CO-2 understand the basics of medicinal plant bioprospecting

CO-3 know the basics of marine bioprospecting and their applications

CO-4 learn about the basics of microbial bioprospecting

CO-5Gain knowledge on the basics of forest products

COURSECODE:U21BOE312

SUBJECT:BIODIVERSITY CONSERVATION-ELECTIVE –I

COURSE OUTCOMES:

CO-1Gain knowledge on categories of biodiversity and conservation methods of biodiversity

CO-2Understand the centre's of origin of crop plants and biodiversity hotspots

CO-3 Find the causes of species extinction and the value of IUCN categories

CO-4Gain knowledge on the role of remote sensing in biodiversity management

CO5- have idea about cryobiology and role of biotechnology in conservation

COURSECODE:U21BON311

SUBJECT:FOREST BOTANY-NME - I

COURSE OUTCOMES:



CO1-understand the importance of forest law and necessity

CO2-know the different aspects of forestry

CO3-learn about the forest resources and its utilization

CO4-gain knowledge about the benefits of forest products to use health of human

CO5-learn and evaluate the tree production methods

COURSECODE:U21BON312 SUBJECT: MUSHROOM CULTIVATION- NME - II

COURSE OUTCOMES:

CO1-differentiate edible and poisonous mushrooms

CO2-know about the production methods of Spawn

CO3- explain the culturing methods of Mushrooms

CO4-know the value added products of mushroomsand mushroom recipes

CO5-understand the medicinal values of mushrooms

SEMESTER -IV

COURSECODE:U21BOT41 SUBJECT: MORPHOLOGY AND TAXONOMY OF ANGIOSPERMS- CORE-VI COURSE OUTCOMES:

CO1-comprehend the morphological characters of angiosperm species

CO2-understand the technique for the preparation of herbarium

CO3-identify plant families by observing kecharacters

CO4-understand the economic uses of selected families

CO5- illustrate species by analyzing the characteristic feature

COURSECODE:U21BOP43 SUBJECT:TAXONOMY OF ANGIOSPERMS- CORE- VIII

COURSE OUTCOMES:

CO1- comprehend the morphological characters of angiosperm species

CO2- understand the technique for the preparation of herbarium

CO3- identify plant families by observing key characters understand the economic uses of selected families illustrate species by analyzing the characteristic features



COURSECODE:U21BOE421

SUBJECT: WOOD TECHNOLOGY- CORE-I

COURSE OUTCOMES:

CO1-Understand the general anatomical features of wood

CO2-enumerate the physical and chemical properties of wood

CO3-acquire a deep knowledge on mechanical properties of wood

CO4- learn and apply the wood preservation techniques

CO5- have a clear idea about uses and scope of various wood

COURSECODE:U21BOE422

SUBJECT:SILVI CULTURE- CORE- I

COURSE OUTCOMES:

CO1- understand the general features and classification of algae

CO2- enumerate the life cycle of major classes of algae and their economic importance

CO3- acquire a deep knowledge on principles of fungi classification to apply in the field

CO4- know the life cycle of major classes of fungi and their economic importance

CO5- have a clear idea about lichens including their economic importance

COURSECODE:U21BON421

SUBJECT: HORTICULTURE- NME – II

COURSE OUTCOMES:

CO1-understand the importance of horticulture technique for commercial production

CO2-describe the importance of gardening and types of gardens

CO3-know indoor and outdoor plants and their propagation

CO4-know the economic value of floriculture

CO5-make and selection of plants for bonsai

COURSECODE:U21BON422

SUBJECT: POMOLOGY- NME-II

COURSE OUTCOMES:

CO1-understand the scope and importance of Indian medicinal system

CO2- know the uses of traditional medicinal plants



C03-learn the processing and preparation of Indian drugs

C04- know the value added products obtained from medicinal plants

C05- understand the preparation of herbal formulations

SEMESTER- V

COURSECODE:U21BOT51

SUBJECT: GENETICS AND EVOLUTION -CORE -VIII

COURSE OUTCOMES:

C01-have a thorough understanding on Mendelian genetics and expression of alleles

C02- comprehend the recombination of eukaryotic genome and diseases linked with sex chromosomes
attain knowledge on determination of sex and abnormalities of chromosomes

C03-depict and explain plasmids and recombination phenomenon

C04- relate population genetics with process of evolution

COURSECODE:U21BOT52

SUBJECT:PLANT PHYSIOLOGY- CORE-IX

COURSE OUTCOMES:

C01-understand the concepts of water and mineral absorption

C02- describe the mechanism of photosynthesis

C03-know the plant respiratory process and energy metabolism for respiration

C04-find the importance of nitrogen to plant and fixation of nitrogen and role of growth hormone

C05-get clear understanding of seed germination and fruiting mechanism

COURSECODE:U21BOT53

SUBJECT:PLANT BIOCHEMISTRY -CORE – X

COURSE OUTCOMES:

C01-understand the foundation of life and structure and functions of carbohydrates

C02- attain knowledge in structure, properties, role and classification of amino acids and proteins

C03-know the structure, properties, role and classification of Lipids and fatty acids

CO4-learn the types of nucleic acids and its structure and biological importance.

CO5- gain knowledge on various types , functions ,requirements and deficiency diseases of vitamins

**COURSECODE:U21BOT54
CORE – XI**

SUBJECT:PLANT ANATOMY AND EMBRYOLOGY -

COURSE OUTCOMES:

CO1-attain knowledge on different types and functions of simple and complex tissues

CO2- understand the arrangement of vascular bundles and types of stomata

CO3- describe classification and theories pertaining to meristematic tissues

CO4-have clear picture on the internal structure of plant parts like leaf, stem and roots.

CO5-explain reproductive structures and fertilization process in flowering plants

fertilization process in flowering plants

**COURSECODE:U21BOE5
ELECTIVE- III**

SUBJECT:ETHNO BOTANY AND ETHNOPHARMACOGNOSY -

COURSE OUTCOMES:

CO1-comprehend the concept of ethnobotany and its related research

CO2- understand the concept and importance of sacred groves

CO3-know about different tribes in south India

CO4- describe the plants which used as traditionally for various treatments

CO5- know the plants with different pharamacological activities

**COURSECODE :U21BOE532
ELECTIVE –III**

SUBJECT:BIOFERTILIZER AND WASTE MANAGEMENT

COURSE OUTCOMES:

CO1-understand microbial nitrogen fixing process for different types of microbial biofertilizers

CO2- know the mass production of biofertilizers

CO3- understand the production of manures and composts

C04- describe the composition and recycling of municipal solid Waste K3 C05 have idea about disposal of solid wastes and sanitary landfills

COURSECODE :U21BOS531 SUBJECT:ORGANIC FARMING SBE – III

COURSE OUTCOMES:

C01-Understand the disadvantages of chemical pesticides and fertilizers

C02- practice organic farming methods

C03- comprehend the sustainable agriculture

C04- learn the pest management techniques

C05- know the importance of organic food and marketing

**COURSECODE :U21BOS532 SUBJECT: FOOD PROCESSING AND PRESERVATION L
SBE – III**

COURSE OUTCOMES:

C01-learn the need and importance of preservation

C02-understand various microbial contamination in food

C03- learn the deterioration of fermented and pickled food products

C04-use the methods of food handling and storage

C05-understand the pasteurisation of milk and yoghurt

SEMESTER VI

**COURSECODE:U21BOT61 SUBJECT:BASICS OF PLANT BIOTECHNOLOGY -
CORE – XIII**

COURSE OUTCOMES:

C01-understand the organization of plant genome and important genes

C02- describe the process of T-DNA transfer and role of vectors in gene transfer

C03-understand the construction of genome libraries and molecular breeding

C04- know the molecular basis of plant growth hormones and phytochromes

C05- know the procedure for the basic tissue culture techniques

COURSECODE :U21BOT62 SUBJECT: ENVIRONMENTAL BIOLOGY AND PHYTOGEOGRAPHY - CORE – XIV COURSE OUTCOMES:

C01-acquire knowledge on ecology and its components.

C02-describe the concepts of ecosystem and dependence of organisms in energy flow

C03- have clear understanding on formation of vegetation

C04- understand the causes and control of various types of pollution

C05- become aware of vegetational types of Tamilnadu and geographical zones of India

COURSECODE :U21BOT63

SUBJECT: FUNDAMENTALS OF MICROBIOLOGY AND PLANTPATHOLOGY - CORE-XV

COURSE OUTCOMES:

C01- have a better knowledge on structure, shapes and reproduction of bacteria and virus

C02- identify and describe fungi and have knowledge on edible and poisonous mushrooms

C03- know the production of dairy products and diversity of microorganisms in food products

C04-understand fermentation technology and production of industrial products using microbes

C05-describe causes and control measures for important plant diseases

COURSECODE :U21BOT64

SUBJECT:BIOSTATISTICS, BIOINSTRUMENTATION AND BIOPHYSICS - CORE-XVI

COURSE OUTCOMES:

C01-perform basic statistical calculations and representation of data in the form of table and figures understand and do correlation and regression analysis

C02- know the principles and applications of different types of microscopes and centrifuges

C03- learn the components and procedure for the operation of spectroscopy, TLC, HPLC and SDS

C04-understand the electromagnetic spectrum and thermodynamic principles

COURSECODE : U21BOE641

SUBJECT:FORESTRY-ELECTIVE- IV

COURSE OUTCOMES:

CO1-acquire knowledge of factors influencing vegetation and its management

CO2-know the technique of measuring the trees by using various parameters

CO-3 gain the knowledge of forest survey

CO4-know the scope of agro forestry

CO5-apply the harvesting practices and identification of timber

COURSECODE :U21BOE642

SUBJECT:SEED TECHNOLOGY-ELECTIVE – IV

COURSE OUTCOMES:

CO1-learn the physical separation of seeds and licensing of machines

CO2-understand the seed drying process and nature of heat sensitive seeds

CO3-learn the principles and operation procedure of major seed processing machines

CO4- know the slurry and Mist-o-matic seed treater and seed user safety.

CO5- attain knowledge on seed storage and packing of seeds

COURSECODE : U21BOS641 SUBJECT:HORTICULTURE TECHNIQUE AND PLANT BREEDING - SBE – IV COURSE OUTCOMES:

CO1-classify fruits and vegetables and also understand the cultivation of mango and banana

CO2- develop skill in horticulture techniques like grafting, layering, budding and garden designing

CO-3maintain garden and access skills on lawn making

CO4- cultivate commercial flowers and flower decoration

CO5- know the plant breeding process and method of hybridization

COURSECODE :U21BOS642
SBE – IV

SUBJECT:MICROTECHNIQUE AND HISTOCHEMISTRY -

COURSE OUTCOMES:

CO1-know the properties and composition of different fixatives

CO2-describe the principle and working mechanism of microtome

CO3- prepare permanent slides for different tissues

CO4-understand different mounting media

CO5- know the different types of sectioning

**COURSECODE :U21BOV51
CULTIVATION**

SUBJECT: VALUE ADDED COURSE -SPIRULINA

COURSE OUTCOMES:

CO1-understand the need of algal mass

CO2- get knowledge on morphology, taxonomy and bio biochemical aspects of spirulina

CO-3understand the various methods involved in spirulina cultivation

CO-4 learn the techniques of spirulina cultivation for SCP production

CO-5 get thorough knowledge on natural production, mass cultivation and process