

Course	Course Outcomes
	CO 1: To learn about the morphology, structure,
	pigmentation , food reserves and methods of
	algae
	CO 2: To differentiate between various groups of Alg
- I (Algae	Fungi, and Bryophytes
Fungi. Lichens	CO 3: To famililarize with the morphological and
& Bryophytes)	systematic knowledge about Bryophytes
	CO 4: Explain the diversity and complexity of plant
	kingdom
	CO 5: Realize the significance of lower group of plan
	CO 1: Learn about the general characters and
Plant Diversity	classification by K.R. Sporne, stelar evolution
- II	CO 2: Pteridophytes, heterospory and origin of seed
(Pteridophytes,	habit.
Gymnosperms	CO 3: Know about the structure, life history and
and	Economic importance of Gymnosperms.
Paleobotany)	CO 4: Studied the methods of fossilization and fossil
	plants
	CO 5: Realize their significance of gymnosperm
	CO 1. Learne about all asification above stariation with
Microbiology, Plant Pathology and Immunology	CO I: Learn about classification, characteristics, un
	CO 2: Know about organisms and cousal factor
	responsible for plant diseases & methods of
	studying plant diseases
	CO 3: Gain knowledge on Host parasite interaction
	process
	CO 4 . Gain Knowledge in plant diseases
	CO 5: Demonstrate about the immune system and
	importance
	importance

Genetics, Plant Breeding and Biostatistics	 CO 1: Learn about Mendelian principles CO 2: Know about gene mapping methods & Extra chromosomal inheritance CO 3: Familiarize about Evolution & Emergence of evolutionary thoughts CO 4: Gain knowledge on Plant breeding techniques
Plant Diversity- I & II, Microbiology, Plant Pathology and Immunology and Genetics, Plant Breeding and Biostatistics (Practical-I covering - CC-I to CC-IV))	 CO 1: Evaluate and discuss groups of plants in terms of their diversity and describe their evolution, CO 2: Identify standard methods for the isolation, identification and culturing of microorganisms. CO 3: Comprehend the ubiquitous nature of microorganisms and identify the different groups of microorganisms from different habitats and their applications CO 4: Students will be able to make informed decisions based on data and apply statistical tools and techniques in their research works CO 5: Through knowledge with DNA and RNA
Forestry	 CO 1: Identify name and classify various forest tree species CO 2: Appreciate tree use and distribution for plantation and natural forest habitat CO 3: Understand the importance of forestry for social, ecological, economic, cultural and environmental purposes CO 4: Apply process of agroforestery CO 5: Realize forest protection laws.

	CO 1: Understand the mushroom characteristics and their importance Comprehend the lifecycles of various classes of fungi
	CO 2: Discuss on the principles and methods involved a different stages of mushrooms
Mushroom cultivation and vermiculture	CO 3: Knows the most important kinds of substrata for mushroom cultivation, belonging to the wastes of agricultural
	CO 4: To prepare media for the mushroom cultivation from these wastes;
	CO 5: Apply their knowledge in cultivating various tropical and subtropical mushrooms and their role in human welfare.
	CO 1: Have a clear idea of developmental process in plants
Developmental	CO 2: Proper koweledge on flower arrangement.
Botany	 CO 3: Learn morphogenesis and organogenesis in plant CO 4: Have a better understanding on fertilization and post-fertilization processes
	CO 5: Have enriched knowledge on the fruit, seed, embryo and endosperm development
	CO 1: Explain the structure of organelles
	CO 2: Identify the special types of chromosomes
Cell and	CO 3: Describe the pattern of regulation gene expression
Molecular	in prokaryotes and eukaryotes
Biology	CO 4: To describe linkage, crossing over and mutations
	CO 5 Through knowledge with DNA, RNA and protein synthesis

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PLANT BIOCHEMISTR Y	 CO 1: Learn the Biochemical nature of cell. CO 2: Describe the catabolic and anabolic pathway of primary metabolites of the plants CO 3: Acquire knowledge on properties, and nature of protein and method of isolating and characterizing CO 4: Illustrate the mechanism of enzyme action and interpret the plots of enzyme kinetics CO 5: Understand the secondary metabolites and its biosynthesis
Developmental Botany, Plant cell and Molecular biology, Plant Biochemistry (Practical –II covering - CC- VI to CC-VIII))	 CO 1: Evaluate and discuss groups of plants in terms of their diversity and describe their Evolution, phylogeny. CO 2: Acquire practical knowledge on identification of various groups of plants CO 3: Analyze the biochemical components of any plant samples CO 4: Understand in-depth knowledge on Electrophoretic techniques CO 5: Familiar with Chromatographic and Spectrophometric techniques
Farm Science	 CO 1: Demonstrate a working knowledge and appreciation of the diversity of plants, their culture and utilization. CO 2: Apply horticultural principles to the successful growth and production of horticultural plants. CO 3: Demonstrate the knowledge, skills and attributes to be successful contributing members of the horticulture profession. CO 4: Demonstrate integrated farming system CO 5: Apply process in applied cultivation of mushroom

Plant Tissue	CO 1: Understand the basic knowledge about tissue culture tools, medium, sterilization and techniques of tissue culture.
	CO 2: Learn about the production of Synthetic seeds
culture	CO 3: Study about the role of tissue culture in crop
	improvement
	CO 4: Know about germ plasm conservation
	CO 1: Define the physiological metabolic processes in
	plants.
Plant Physiology	CO 2: Explain the role of hormones for plant growth
	organelles
	CO 4: Do the functional behaviors of plant growth un different environments.
	CO 5: To know photoperiodism in plants
Plant Systematics	CO 1: Understand the taxonomic principles and to understand the different systems of plant classification
	CO 2: Demonstrate understanding of evolutionary
	processes and patterns in the major plant grou
	CO 4: Demonstrate the ability to handle and analyze
	plant materials in the laboratory and herbarium in the field
	CO 5: Knolodge on Key family characters, floral
	characters, floral variations,

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Core Practical –	
III Plant	CO 1: Provides skill in structural and functional
Physiology,	characteristics of various plant parts
Plant	CO 2: Acquire practical knowledge on identification of
systematics,	various groups of plants
Plant ecology	CO 3: Understand the photosynthetic mechanism and
and Dharte geograph	related events of plants
Phytogeograph w Plont	CO 4: Understand the role of various growth promoting,
y, Flant Biotechnology	substances and their action
Diotechnology	CO 5: Acquire knowledge on physiological response of
	plants to various factors
	CO 1: To have the clear understanding of ecology and
	environmental concepts.
	CO 2: Undertake the ecological conservation
	CO 3: Perform analytical methods in environmental and
Plant Ecology	biodiversity management
and	CO 4: Equip on the methods to adapt in sustainable
Phytogeography	environmental management related research and
	development
	CO 5: Clear idea on Population and Community
	Ecology: Characteristics of a population,
	population growth curves, population.
	CO 1: Learn the phylogenetic analysis –molecular evolution
	CO 2: Studied the application of Bioinformatics in Drug
	designing
	CO 3: Students understand whole genome analysis
Bioinformatics	methods
	CO 4: Students know the computational tools used for
	sequence analysis tools
	CO 1: Understand the applications of computer in
	biological sciences.
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Biofertilizer Technology	 CO 1: Isolate, identify and mass multiply biofertilizers CO 2: Explain the benefits of organic farming CO 3: To give an overview of relevance use of microbia biofertilizers CO 4: Understand the application of AM CO 5: Familiar in vermicompost making
Pharmacognos y	 CO 1: Know about history and relevance of herbal drug in Indian system of medicine CO 2: Learn the macroscopic and microscopic characters, chemical constituents, adulterants, CO 3: Therapeutically and pharmaceutical uses of medicinal plants CO 4: Understand the techniques for drug evaluation (Chemical, Physical and Biological), CO 5: Skilled in herbal drug production
Research Methodology	 CO 1: Training and participating in active research activities for their academic and professional levels CO 2: Creation of novel ideas and simple techniques useful to the society (R/D) CO 3: Acquire background knowledge in research publication and thesis writing CO 4: Idea on publication in journals CO 5: Clear ideas on data analysis

CORE PRACTICAL - RESEARCH	CO 1: Assess critically the following methods: literature study, case study, structured surveys, interview focus groups, participatory approaches, narrate analysis, cost-benefit analysis, scenario methodology and technology foresight.
KESEARCH METHODOLOG Y	CO 2: Critically assess research methods pertinent to technology innovation research.
	CO 3: Obtain critical analysis, thesis and report writing Idea on manuscript preparation for publication
	CO 4: Well in data collection and methodology formulating.
	CO 1: Concepts, tools and techniques related to in vit propagation of plants.
PLANT BIOTECHNOLO GY AND	CO 2: Different methods used for genetic transformat of plants, use of Agrobacterium as a vector for plant transformation, components of a binary
GENETIC ENGINEERING	CO 3: Various case studies related to basic and applier research in plant sciences using transgenic technology
	CO 4: Learn about bioreactors and their importance. CO 5: Familiar in molecular markers
Bioinstrument ation and Biotechniques	CO 1: Gain skill on working principles of pH meter, colorimeter and centrifuge
	CO 2: Learn the technique of Electrophoresis & Chromatography
	CO 3: Understand general laboratory procedures and maintenance of research equipments, microsco

	CO 4: Describe the pH measurement in soil and water samples Understand how to isolate cellular constituents
	CO 5: Skilled in molecular marker technique
	CO 1: At the end of the project, students should have increased: their capacity to think critically; - th ability to design, analyse and execute an experiment;
Project Work	CO 2: Their confidence and ability in communication skills (in writing and oral).
	CO 3: Acquiring the literature collection methods, an interpreting the data of their scientific experiments etc