

2. PEO/PO/PSO

PROGRAMME OUTCOMES (POS)

PO1: Knowledge and understanding:

1. The range of plant diversity in terms of structure, function and environmental relationships.
2. The evaluation of plant diversity.
3. The role of plants in the functioning of the global ecosystem.
4. Statistics as applied to biological data.

PO2: Intellectual skills:

1. Think logically and organize tasks into a structured form.
2. Assimilate knowledge and ideas based on wide reading and through the internet.
3. Transfer of appropriate knowledge and methods from one topic to another within the subject.
4. Understand the evolving state of knowledge in a rapidly developing field.
5. Construct and test hypothesis.
6. Plan, conduct and write a report on an independent term project.

PO3: Practical skills: Students learn to carry out practical work, in the field and in the laboratory, with minimal risk.

1. Interpreting plant morphology and anatomy.
2. Plant identification.
3. Vegetation analysis techniques.
4. A range of physiochemical analyses of plant materials in the context of plant physiology and biochemistry.
5. Analyze data using appropriate statistical methods and computer packages.
6. Plant pathology to be added for sharing of field and lab data obtained.

PO4: Transferable skills: 1. Communication of scientific ideas in writing and orally.

2. Ability to work as part of a team.
3. Ability to use library resources.
4. Time management.
5. Career planning.

PO5: Scientific Knowledge: Apply the knowledge of basic science, life sciences and fundamental process of plants to study and analyze any plant form.

PO6: Problem analysis: Identify the taxonomic position of plants, formulate the research literature, and analyze non reported plants with substantiated conclusions using first principles and methods of nomenclature and classification in Botany.

PO7: Design/development of solutions: Design solutions from medicinal plants for health problems, disorders and disease of human beings and estimate the phytochemical content of plants which meet the specified needs to appropriate consideration for the public health

PO8: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and development of the information to provide valid conclusions

PO9: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern instruments and equipments for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological activities of plants with an understanding of the application and limitations.

PO10: The Botanist and society: Apply reasoning informed by the contextual knowledge to assess plant diversity, its importance for society, health, safety, legal and environmental issues and the consequent responsibilities relevant to the biodiversity conservation practice.

PO11: Environment and sustainability: Understand the impact of the plant diversity in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO12: Ethics: Apply ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation.

COURSE OUTCOMES AND MAPPING WITH BLOOMS TAXANOMY

PLANT DIVERSITY I

CO No.	Course Outcome	Blooms Category
--------	----------------	-----------------

CO1	Understand the diversity among Algae.	Remember
CO2	Know the systematic, morphology and structure of Algae. Understand the life cycle pattern of Algae.	Understanding
CO3	Understand the useful and harmful activities of Algae.	Understanding
CO4	Understand the morphological diversity of Bryophytes.	Understanding
CO5	Know the taxonomic position, occurrence, thallus structure, reproduction of Bryophytes	Analyze
CO6	Understand the economic importance of the Bryophytes	Remember

PLANT DIVERSITY II, MUSHROOM CULTIVATION

CO No.	Course Outcome	Blooms Category
CO1	Understand the Biodiversity of Fungi	Remember
CO2	Know the Economic Importance of Fungi, Virus, bacteria, lichens	Understand
CO3	Understand the economic importance of mushroom and its cultivation	Apply
CO4	To motivate for self employment	Create

ANATOMY AND EMBRYOLOGY

CO No.	Course Outcome	Blooms Category
CO1	Know various tissue systems.	Remember
CO2	Understand the normal and anomalous secondary growth in plants and their causes.	Understand
CO3	Perform the techniques in anatomy	Apply
CO4	Know the methods of pollination and fertilization	analyze
CO5	Know fertilization, endosperm and embryogeny	Analyze

HORTICULTURE

CO No.	Course Outcome	Blooms Category
CO1	Understand various plant cultivation methods	Understand
CO2	Marketing the commercial flowering plants	Apply
CO3	To motivate for self employment	Create

PLANT DIVERSITY-III

CO No.	Course Outcome	Blooms Category
CO1	Understand the morphological diversity of Pteridophytes and Gymnosperms.	Remember
CO2	Understand the economic importance of the Pteridophytes and Gymnosperms	Understand

CO3	Know the evolution of Pteridophytes and Gymnosperms.	Understand
CO4	Know the vegetative characteristics of the plant	Analyze
CO5	Learn about the reproductive characteristics of the plant.	Analyze

PLANT MORPHOLOGY AND TAXONOMY OF ANGIOSPERMS

CO No.	Course Outcome	Blooms
CO1	Understand the Phylogeny of angiosperms-A general account of the origin of Angiosperms	Remember
CO2	Understand the general range of variations in the group of angiosperms.	Understand
CO3	Trace the history of development of systems of classification emphasizing angiospermic taxa. Know the floral variations in angiospermic families, their phylogeny and evolution	Understand
CO4	Learn about the characters of biologically important families of angiosperms.	Analyze
CO5	Understand various rules, principles and recommendations of plant nomenclature produces in plant identification.	Understand

CO6	Understand major evolutionary trends in various parts of angiospermic plants	Understand
-----	--	------------

CYTOLOGY AND GENETICS

CO No.	Course Outcome	Blooms Category
CO1	The eukaryotic cell cycle and mitotic and meiotic cell division	remember
CO2	Structure and organization of cell membrane	Understand
CO3	Process of membrane transport and membrane models	Understand
CO4	Mendelian and Neo-mendelian genetics	Remember
CO5	To study the phenomenon of dominance, laws of segregation, independent assortment of genes	Understand

BIOINSTRUMENTATION AND BIOSTATISTICS

CO No.	Course Outcome	Blooms Category
CO1	Bioinstrumentation understand the new instrumentation techniques and its application in various fields.	Understand
CO2	Statistics as applied to biological data in various taxonomic plants	Apply
CO3	Know the details of Microscopy-Principles of light microscopy, electron microscopy (TEM and SEM).	Analyze
CO4	Understand & perform Chromatography and cultural techniques in Botany.	Understand

CO5	Understand the methods used in Micrometry, Microtomy and Microphotography	Understand
-----	---	------------

CO No.	Course Outcomes	Blooms Taxonomy
CO1	Know about the genomic organization or living organisms, study of genes, genome, chromosome, etc.	Understand
CO2	Gain knowledge about the mechanism and essential component required for prokaryotic DNA replication.	Apply
CO3	Understand the fundamentals of Recombinant DNA Technology.	Analyze
CO4	Know about the Genetic Engineering.	Understand
CO5	Understand the principle and basic protocols for genetically modified plants and its usage	Understand

AGRICULTURAL MICROBIOLOGY

CO No.	Course Outcomes	Blooms Taxonomy
CO1	Understand the concept, principle and types of sterilization methods.	understand
CO2.	Know the concept and characteristics of antiseptic, disinfectant and their mode of action.	Analyze
CO3	Know the cultivation methods of bacteria, yeast, fungi and virus.	Analyze

PLANT BREEDING

CO No.	Course Outcomes	Blooms Taxonomy
CO1	Understand the science of plant breeding.	understand
CO2.	To introduce the student with branch of plant breeding for the survival of human being from starvation.	Analyze

CO3	To study the techniques of production of new superior crop varieties.	Analyze
CO4.	Understand the modern strategies applied in Genetics and Plant Breeding to sequence and analyze genomes.	understand

PLANTPHYSIOLOGY

CO No.	Course Outcomes	Blooms Taxonomy
CO1	Know importance and scope of plant physiology.	understand
CO2.	Understand the plants and plant cells inrelation to water.	understand
CO3	Understand the process of photosynthesis in higher plants with particular emphasis on light and dark reactions, C3 and C4 pathways	understand
CO4.	Learn about the movement of sap and absorption of water in plant body	Understand
CO5.	Understand the plant movements.	understand

PLANT ECOLOGY

CO No.	Course Outcomes	Blooms Taxonomy
CO1	To identify diversity of life forms in an ecosystems	understand
CO2	To understand the role that biodiversity play in conservation science	understand
CO3	To understand ecological relationship between organism and their environment	understand

PLANTPROTECTION

CO No.	Course Outcomes	Blooms Taxonomy
CO1	Know the terminologies in plant pathology.	understand
CO2	Understand the scope and importance of Plant Pathology.	understand
CO3	Know the prevention and control measures of plant diseases and its effect on economy of crops	understand

BIOCHEMISTRY

CO No.	Course Outcomes	Blooms Taxonomy
CO1	Understand the Biochemical nature of cell.	understand
CO2	Know the chemical nature of biomolecules.	understand
CO3	Understand the different types of interaction in Biomolecules.	understand
CO4	Structure and general features of enzymes.	Understand
CO5	Concept of enzyme activity and enzyme inhibition	understand

SEED TECHNOLOGY

CO No.	Course Outcomes	Blooms Taxonomy
CO1	Understand the seed culture techniques like synthetic seeds	understand
CO2	To gain knowledge about seed certification and seed viability	Analyze

MEDICO ETHONO BOTANY

CO No.	Course Outcomes	Blooms Taxonomy
CO1	Gain knowledge about various plants of economic use.	understand
CO2	Know importance of plants & plant products.	understand
CO3	Understand the chemical contents of the plant products.	understand
CO4	To understand the secondary metabolites and drug discoveries	understand