

# **NEHRU MEMORIAL COLLEGE (AUTONOMOUS)**

**NATIONALLY ACCREDITED WITH "A" GRADE BY NAAC**

**PUTHANAMPATTI, TRICHY - 621007**



**DEPARTMENT OF BOTANY**

**UG**

**COURSE OUTCOME (COS)**

Name of the Course	Course Outcomes
<b>PLANT DIVERSITY -I (ALGAE, FUNGI, LICHENS AND BRYOPHYTES)</b>	<b>CO 1:</b> Recognize the lower group of plants. <b>CO 2:</b> Explain the diversity and complexity of plant kingdom <b>CO 3:</b> Realize the significance of lower group of plants. <b>CO 4:</b> Understand the importance of algae <b>CO 5:</b> Familiar in importance of bryophytes
<b>PLANT DIVERSITY- I &amp; II</b>	<b>CO 1:</b> Create and manipulate table of information Familiarize with the external and internal structure of lower group organism <b>CO 2:</b> Learn the microscopic technique <b>CO 3:</b> Learn the survey techniques for evaluating the values of medicinal plants <b>CO 4:</b> Know about the cellular drawing <b>CO 5:</b> Gain knowledge on plant pathological diseases
<b>PLANT DIVERSITY-II (PTERIDOPHYTES GYMNASPERMS AND PALEOBOTANY</b>	<b>CO 1:</b> Distinguish the first vascular plants and first flowering plants <b>CO 2:</b> Describe their diversity and complexity <b>CO 3:</b> Realize their significance of gymnosperm <b>CO 4:</b> Familiar in economic importance of Gymnosperms <b>CO 5:</b> To know the significance of fossils and geological time scale
<b>BIOFERTILIZERS AND ORGANIC FARMING</b>	<b>CO 1:</b> Isolate, identify and mass multiply biofertilizers <b>CO 2:</b> Explain the benefits of organic farming <b>CO 3:</b> Learn the characteristics, identification, cultural methods and maintenance of Azospirillum, Azotobacter, <b>CO 1:</b> Azolla and Anabaena. <b>CO 4:</b> Understand the application of AM <b>CO 5:</b> Familiar in vermicompost making

<p><b>MICROBIOLOGY AND PLANT PATHOLOGY</b></p>	<p><b>CO 1:</b> Explain the classification, nutrition and growth of microbes.</p> <p><b>CO 2:</b> Perform the basic techniques in microbial culture production</p> <p><b>CO 3:</b> Identify the plant diseases and try to practice the control measures for such diseases</p> <p><b>CO 4:</b> Gain knowledge on Host parasite interaction process Gain Knowledge in plant diseases.</p>
<p><b>MICROBIOLOGY AND PLANT PATHOLOGY &amp; CYTOLOGY AND GENETICS</b></p>	<p><b>CO 1:</b> Be able to identify appropriate laboratory procedures for the detection and identification of organisms</p> <p>CO 2: Basic laboratory skills for the detection and identification of organisms Work effectively as an individual or part of a team</p> <p>CO 3: Familiar in to identify the various stages during cell division</p> <p>CO 4: Skilled in problem solving in genetics</p> <p>CO 5: Students can identify the disease</p>
<p><b>MUSHROOM TECHNOLOGY</b></p>	<p><b>CO 1:</b> Cultivate mushroom cultivation.</p> <p><b>CO 2:</b> Explain the nutritive and medicinal value of mushrooms.</p> <p><b>CO 3:</b> Depict the common cultivation methods for mushrooms.</p> <p><b>CO 4:</b> Provide knowledge on layout for mushroom cultivation</p> <p><b>CO 5:</b> Through knowledge on diseases in mushroom</p>

<p><b>CYTOLOGY AND GENETICS</b></p>	<p><b>CO 1:</b> To explain the structure of Cell components and their functions.</p> <p><b>CO 2:</b> To have knowledge of the nature and function of genes, processes of inheritance.</p> <p><b>CO 3:</b> To describe linkage, crossing over and mutations.</p> <p><b>CO 4:</b> Gained knowledge on linkage techniques.</p> <p><b>CO 5:</b> Through knowledge with DNA and RNA</p>
<p><b>HORTICULTURE</b></p>	<p><b>CO 1:</b> Demonstrate knowledge and understanding in Current applications of horticultural principles practices in propagation,</p> <p><b>CO 2:</b> Familiar in pest management, production, maintenance, and business practices.</p> <p><b>CO 3:</b> Apply horticultural principles to the successful growth a</p> <p><b>CO 4:</b> Provide knowledge on production of horticultural plants.</p> <p><b>CO 5:</b> Demonstrate the knowledge, skills and attributes to be successful contributing members of the horticulture profession.</p>
<p><b>Food science and Nutrition</b></p>	<p><b>CO 1:</b> Recognize the main world food problems and their root causes</p> <p><b>CO 2:</b> Describe food components, with emphasis on proteins, carbohydrates and lipids</p> <p><b>CO 3:</b> Describe food sensory, and discuss the main food quality attributes as perceived by the senses</p> <p><b>CO 4:</b> Describe the principal causes of food deterioration; relate to practical examples</p> <p><b>CO 5:</b> Through knowledge on concept of extension.</p>

<p><b>PLANT ANATOMY AND EMBRYOLOGY</b></p>	<p><b>CO 1:</b> To make connections between plant anatomy and the other major disciplines of biology</p> <p><b>CO 2:</b> To identify and compare structural differences among different taxa of vascular plants.</p> <p><b>CO 3:</b> Embryology gives information to student about the development of embryo to mature seed and original plants.</p> <p><b>CO 4:</b> Through with fertilization in plants</p> <p><b>CO 5:</b> Gained knowledge on polyembryony</p>
<p><b>PLANT SYSTEMATICS AND ECONOMIC BOTANY</b></p>	<p><b>CO 1:</b> Plant classification gives information about plant to classify in different families.</p> <p><b>CO 2:</b> Understand the environments and basic concept of taxonomy, ecology.</p> <p><b>CO 3:</b> Herbarium techniques give knowledge to help the identification of plants.</p> <p><b>CO 4:</b> Gained knowledge economic importance of plants.</p> <p><b>CO 5:</b> Utilization of plants to enable the student about utility in life.</p>
<p><b>BIOCHEMISTRY AND BIOPHYSICS</b></p>	<p><b>CO 1:</b> Learn the Biochemical nature of cell.</p> <p><b>CO 2:</b> Know the chemical nature of biomolecules.</p> <p><b>CO 3:</b> Describe the structure and general features of enzymes</p> <p><b>CO 4:</b> Apply the concept of enzyme activity and enzyme inhibition</p> <p><b>CO5:</b> Trained them on electrophoresis operation.</p>

<p><b>Plant Anatomy, Embryology, Plant Systematic And Economic Botany &amp; Biochemistry and biophysics.</b></p>	<p><b>CO 1:</b> Familiar in plant systematic</p> <p><b>CO 2:</b> Students can differentiate the anatomical structures of plant cells</p> <p><b>CO 3:</b> They can identify the plants and the importance of it.</p> <p><b>CO 4:</b> They can do biochemical estimations in plant samples.</p> <p><b>CO 5:</b> Trained them operating instruments used in Biochemistry.</p>
<p><b>HORTICULTURE AND PLANT BREEDING</b></p>	<p><b>CO 1:</b> The breadth and depth of the profession of horticulture</p> <p><b>CO 2:</b> Basic horticultural science terminology</p> <p><b>CO 3:</b> Understand the developments in plant breeding</p> <p><b>CO 4:</b> Understand the concepts of molecular breeding.</p> <p><b>CO 5:</b> Through knowledge on crossing techniques.</p>
<p><b>MEDICINAL BOTANY</b></p>	<p><b>CO 1:</b> We able to demonstrate basic skills in herbal identification</p> <p><b>CO 2:</b> Demonstrate harvesting and processing of plant materials</p> <p><b>CO 3:</b> Be competent in the basic business skills necessary to build and maintain an herbal practice</p> <p><b>CO 4:</b> Be able to collaborate with other healthcare providers in partnership</p> <p><b>CO 5:</b> Skilled in medicinal preparation.</p>

<p style="text-align: center;"><b>EDIBLE MUSHROOM CULTIVATION</b></p>	<p><b>CO 1:</b> To highlight the potential of these studies to become an entrepreneur</p> <p><b>CO 2:</b> Knows the most important kinds of substrata for mushroom cultivation, belonging to the wastes of agricultural</p> <p><b>CO 3:</b> To prepare media for the mushroom cultivation from these wastes; -</p> <p><b>CO 4:</b> Can work with autoclaves; - can prepare microbiological media.</p> <p><b>CO 5:</b> Familiar in mushroom cultivation.</p>
<p style="text-align: center;"><b>GREEN HOUSE TECHNOLOGY</b></p>	<p><b>CO 1:</b> At the end of the course students should know identify the types and structures of existing greenhouse.</p> <p><b>CO 2:</b> Learned about how to construct green house</p> <p><b>CO 3:</b> In addition, students will learn the different systems for climate control in greenhouse and their management, cooling and heating systems.</p> <p><b>CO 4:</b> Finally, students will be familiar with the techniques of light management.</p> <p><b>CO 5:</b> Students trained on disease and pest management.</p>
<p style="text-align: center;"><b>PLANT PHYSIOLOGY</b></p>	<p><b>CO 1:</b> To understand plant physiological processes and metabolism.</p> <p><b>CO 2:</b> To explain the role of micro nutrients in plant growth and development.</p> <p><b>CO 3:</b> To relate photosynthesis with the formation of primary and secondary metabolites.</p>

	<p><b>CO 4:</b> To clarify the mechanism and breaking of dormancy.</p> <p><b>CO 5:</b> Familiarized on plant movements.</p>
<p><b>PLANT BIOTECHNOLOGY</b></p>	<p><b>CO 1:</b> Concepts, tools and techniques related to in vitro propagation of plants.</p> <p><b>CO 2:</b> Different methods used for genetic transformation of plants, use of Agrobacterium as a vector for plant transformation, components of a binary vector system.</p> <p><b>CO 3:</b> Various case studies related to basic and applied research in plant sciences using transgenic technology.</p> <p><b>CO 4:</b> Learn about bioreactors and their importance.</p> <p><b>CO 5:</b> Familiar in molecular markers</p>
<p><b>PLANT PHYSIOLOGY AND PLANT BIOTECHNOLOGY</b></p>	<p><b>CO 1:</b> Got knowledge on mechanism of plant physiology.</p> <p><b>CO 2:</b> Understand the fundamentals of Recombinant DNA Technology.</p> <p><b>CO 3:</b> Know about the Genetic Engineering.</p> <p><b>CO 4:</b> Trained in isolation of DNA.</p> <p><b>CO 5:</b> Understand the principle and basic protocols for Plant Tissue Culture.</p>
<p><b>PLANT ECOLOGY AND PHYTOGEOGRAPHY</b></p>	<p><b>CO 1:</b> To understand ecological relationships between organisms and their environment.</p> <p><b>CO 2:</b> To identify diversity of life forms in an ecosystem.</p> <p><b>CO 3:</b> Try to identify different ecological units found around your habitat and prepare a list of flora and fauna of that ecological system.</p> <p><b>CO 4:</b> Familiar in impact and control measures of pollution</p> <p><b>CO 5:</b> Got knowledge on phytogeography</p>



<p><b>FLORICULTURE</b></p>	<p><b>CO 1:</b> Relate the importance of the floriculture industry</p> <p><b>CO 2:</b> Describe career opportunities in the floriculture industry</p> <p><b>CO 3:</b> Explain the techniques in grading, bunching and shipping cut flowers in preparation for market</p> <p><b>CO 4:</b> Knowledge on commercial floriculture.</p> <p><b>CO 5:</b> Trained in floral arrangements.</p>
<p><b>BIOINFORMATICS AND BIOSTATISTICS</b></p>	<p><b>CO 1:</b> Students will learn necessary skills in the use of databases and online tools related to biological data.</p> <p><b>CO 2:</b> Students will learn about the handling and analysis of databases using online tools.</p> <p><b>CO 3:</b> Students will be trained in statistical concepts and principles relevant to biological data and their applications</p> <p><b>CO 4:</b> Students trained on biostatistics</p> <p><b>CO 5:</b> Students will learn about goodness of fit</p>
<p><b>SEED SCIENCE TECHNOLOGY</b></p>	<p><b>CO 1:</b> Student will have better understanding of seed physiology and vigour.</p> <p><b>CO 2:</b> The course knowledge will create trained human resource for seed industry and research organizations.</p> <p><b>CO 3:</b> Knowledge on current varieties of field crops, consultant services</p> <p><b>CO 4:</b> Knowledge on seed production</p> <p><b>CO 5:</b> To acquire knowledge on seed legislation and trading</p>

<p><b>NURSERY AND GARDENING</b></p>	<p><b>CO 1:</b> Provide the necessary technical plant science</p> <p><b>CO 2:</b> Horticultural knowledge and skills to successfully operate a small horticulture business.</p> <p><b>CO 3:</b> Prepare students for transfer to plant science / horticulture programs at institutions of higher learning</p> <p><b>CO 4:</b> Basic and advanced plant science / horticultural skills development and improvement</p> <p><b>CO 5:</b> Make the students familiar in marketing procedures.</p>
<p><b>ALLIED BOTANY - I</b></p>	<p><b>CO 1:</b> Explain the arrangement of leaves and inflorescences in the plant kingdom.</p> <p><b>CO 2:</b> Construct floral diagram and floral formula for the selected plant species.</p> <p><b>CO 3:</b> Predict the structural and functional details of cell organelles and their properties.</p> <p><b>CO 4:</b> Demonstrate the Mendelian principles with checker board.</p> <p><b>CO 5:</b> Illustrate the elements of conducting system in plants.</p>
<p><b>ALLIED BOTANY - II</b></p>	<p><b>CO 1:</b> Describe the structure and reproduction methods of algae.</p> <p><b>CO 2:</b> Demonstrate the methods of reproduction and life cycle of fungi.</p> <p><b>CO 3:</b> Classify the bacteria and viruses based on their structure.</p> <p><b>CO 4:</b> Compare and contrast the structure and methods of reproduction of Funaria, Lycopodium and Cycas.</p> <p><b>CO 5:</b> Explain the concept of absorption of water and salts.</p>

**ALLIED  
PRACTICAL I &  
II**

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structure of lower group organism
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