

DEPARTMENT OF BOTANY

B.SC (CBZ)

Course Outcomes

Paper	Paper Name (Paper code)	Outcomes After completion of the course the student should be able to
SEMESTER I		
PAPER – I	Micro Organism and Non Vascular plant	<p>CO 1 Understand origin of life on the earth. Illustrate diversity among the viruses and prokaryotic organisms and can categorize them</p> <p>CO 2 : Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles.</p> <p>CO 3 : Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi</p> <p>CO 4 : Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat</p> <p>CO 5 : Evaluate the ecological and economic value of microbes, thallophytes and bryophytes</p> <p>PRACTICAL</p> <ul style="list-style-type: none"> • Understand the origin of life on the earth. Illustrate diversity among the viruses and prokaryotic organisms and can categorize them. • Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles. • Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi. • Recall and explain the evolutionary trends among amphibians of plant

		<p>kingdom for their shift to land habitat.</p> <ul style="list-style-type: none"> • Evaluate the ecological and economic value of microbes, thallophytes and bryophytes
SEMESTER II		
PAPER – II	Vascular plants and Systematic toneonomy: Phytogeography	<p>CO 1 : On successful completion of this course, the students will be able to: Classify and compare Pteridophytes and Gymnosperms based on their morphology, anatomy</p> <p>CO 2 Reproduction and life cycles. Justify evolutionary trends in tracheophytes to adapt for land habitat</p> <p>CO 3 : Critically understand various taxonomical aids for identification of Angiosperms</p> <p>CO 4 :Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families. Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize</p> <p>CO 5 : their goods and services for human welfare. Locate different phytogeographical regions of the world and India and can analyze their floristic wealth.</p>
		<p>PRACTICAL</p> <ul style="list-style-type: none"> • Demonstrate the techniques of section cutting, preparing slides, identifying of the material and drawing exact figures. Compare and contrast the morphological, anatomical and reproductive features of vascular plants. • Identify the local angiosperms of the families prescribed to their genus and species level prepare herbarium. • Exhibit skills of preparing slides,

		identifying the given twigs in the lab and drawing figures of plant twigs, flowers and floral diagrams as they are. Prepare and preserve specimens of local wild plants using herbarium techniques.
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SEMESTER III

PAPER – III	Anatomy and Embryology of Angiosperms plant Ecology and Biodiversity	<p>CO 1 : . Understand on the organization of tissues and tissue systems in plants. CO 2 Illustrate and interpret various aspects of embryology. CO 3 : Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities CO 4 : Correlate the importance of biodiversity and consequences due to its loss CO 5: Enlist the endemic/ endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation</p>
		<p>PRACTICAL</p> <ul style="list-style-type: none"> • Get familiarized with techniques of section making, staining and microscopic study of vegetative, anatomical and reproductive structure of plants. • Observe externally and under microscope, identify and draw exact diagrams of the material in the lab. Demonstrate application of methods in plant ecology and conservation of bio diversity and qualitative and quantitative aspects related to populations and communities of plants

SEMESTER IV

<p>PAPER – IV:</p>	<p>Plant Physiology and Metabolism</p>	<p>CO 1 Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants CO 2: . Evaluate the role of minerals in plant nutrition and their deficiency symptoms CO 3: Interpret the role of enzymes in plant metabolism CO 4 : Critically understand the light reactions and carbon assimilation processes responsible for Evaluate the physiological factors that regulate growth and development in plants. CO 5 : Examine the role of light on flowering and explain physiology of plants under stress conditions.</p>
<p>PAPER – V:</p>	<p>Cell biology – Genetics and Plant breeding</p>	<p>PRACTICAL</p> <ul style="list-style-type: none"> •Conduct lab and field experiments pertaining to Plant Physiology, that is, biophysical and biochemical processes using related glassware, equipment, chemicals and plant material. •Estimate the quantities and qualitative expressions using experimental results and calculations •Demonstrate the factors responsible for growth and development in plants. <p>CO 1 : : Distinguish prokaryotic and eukaryotic cells and design the model of a cell. CO 2 : Understand the organization of a eukaryotic chromosome and the structure of genetic material. Demonstrate techniques to observe the cell and its components under a microscope CO 3 : Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings. Elucidate the role of extra-chromosomal genetic material for inheritance of characters CO 4: Evaluate the structure, function</p>

		and regulation of genetic material. CO 5: Understand the application of principles and modern techniques in plant breeding.
		PRACTICAL <ul style="list-style-type: none"> • Show the understanding of techniques of demonstrating Mitosis and Meiosis in the laboratory and identify different stages of cell division. • Identify and explain with diagram the cellular parts of a cell from a model or picture and prepare models. Solve the problems related to crosses and gene interactions. • Demonstrate plant breeding techniques such as emasculation and bagging

SEMESTER V

PAPER – VI(c)	Plant Tissue Culture	<p>CO 1 : Comprehend the basic knowledge and applications of plant tissue culture.</p> <p>CO 2 : Identify various facilities required to set up a plant tissue culture laboratory.</p> <p>CO 3 : Acquire a critical knowledge on sterilization techniques related to plant tissue culture</p> <p>CO 4 : Demonstrate skills of callus culture through hands on experience</p> <p>CO 5 : Understand the biotransformation technique for production of secondary metabolites.</p> <p>PRACTICAL</p> <ul style="list-style-type: none"> • List out, identify and handle various equipment in plant tissue culture lab. • Learn the procedures of preparation of media. • Demonstrate skills on inoculation,
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		<p>establishing callus culture and Micro propagation.</p> <ul style="list-style-type: none"> • Acquire skills in observing and measuring callus growth. • Perform some techniques related to plant transformation for secondary Metabolite production
<p>PAPER – VII(c)</p>	<p>MUSHROOM CULTIVATION</p>	<p>CO 1 : Understand the structure and life of a mushroom and discriminate edible and poisonous mushrooms. CO 2 : Identify the basic infrastructure to establish a mushroom culture unit. CO 3 : Demonstrate skills preparation of compost and spawn. CO 4 : Acquire a critical knowledge on cultivation of some edible mushrooms CO 5 : Explain the methods of storage, preparation of value-added products and marketing.</p>
		<p>PRACTICAL</p> <ul style="list-style-type: none"> • Identify and discriminate different mushrooms based on morphology. • Understand facilities required for mushroom cultivation. • Demonstrate skills on preparation of spawn, compost and casing material. • Exhibit skills on various cultivation practices for an edible mushroom.