

PROGRAMME	PROGRAMME OUTCOMES(PO)
B.Sc. (Life Sciences)	• PO1: Acquire knowledge in Life Sciences with a thrust on fundamental principles and theories related to various scientific phenomena and their relevance in day-to-day life. • PO2: Graduates attain practical knowledge through hands-on training and project experience to meet the industrial needs. • PO3: Graduates develop critical thinking skills to identify, analyze and solve problems of their core areas using modern tools. • PO4: Ability to communicate effectively the comprehended scientific data and knowledge, write effective reports, design documentation and make effective presentations. • PO5: Ability to appreciate the benefits of experiential learning by inculcating good work habits, time management and self-discipline. • PO6: Ability to apply critical thinking, decision making, and reasoning skills in the process of quality education
	PROGRAMME SPECIFIC OUTCOMES(PSO)
B.Sc. (BZC)	• PSO 1: Emphasizes the diversity in form and function of plants and animals, create an awareness of the impact of Chemistry on the environment, society, appraise role of green chemistry in environment sustainability. • PSO 2: Students will be able to pursue higher education & focuses on scientific research, and apply this knowledge in both real life and in a laboratory setting. • PSO 3: The fundamental skills within the field of Biology and Chemistry are understood and hence can function effectively as professionals in the Life Science based industries. • PSO 4: This programme is vital to further increase their understanding of human health and environmental issues. • PSO 5: Students will be able to understand the fundamental theories, concepts and applications in four basic areas of research in Chemistry (Analytical, Inorganic, Physical & Organic). Develop the ability to explore new areas of research in Chemistry and allied field of Life sciences.

B.Sc (BZCA/BZCS)	• PSO 1: Emphasizes the diversity in form and function of plants and animals. • PSO 2: Students will be able to pursue higher education & focuses on scientific research, and apply this knowledge in both real life and in a laboratory setting. • PSO 3: The fundamental skills within the field of Biology and Zoology are understood and hence can function effectively as professionals in the Life Science based industries. • PSO 4: They will be able to use databases, computational tools, decipher scientific data and can act as a bridge between physical & life sciences. Become competent to function both in wet as well as dry labs.
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S.No.	Course Code	Course Title	Course Outcomes (CO)
1.	BS104	Paper I Microbial Diversity and Lower plants	On completion of this course, the students will be able to: CO1: Develop understanding on the concept of microbial nutrition. CO2: Classify viruses based on their characteristics and structures. CO3: Develop critical understanding of plant diseases and their remediation. CO4: Examine the general characteristics of bacteria and their cell reproduction/ recombination. CO5: Increase the awareness and appreciation of human friendly viruses, bacteria, algae and their economic importance CO6: Develop critical understanding on morphology, anatomy and reproduction of • Bryophytes, Pteridophytes. CO7: Understanding of plant evolution and their transition to land habitat. CO8: Demonstrate proficiency in the experimental techniques and methods of appropriate analysis of Bryophytes, and Pteridophytes.
2.	BS204	Paper-II Gymnosperms, Taxonomy of Angiosperms and Ecology	On completion of this course, the students will be able to: CO1: Develop critical understanding on morphology, anatomy and reproduction of Gymnosperms. CO2: Demonstrate proficiency in the experimental techniques and methods of appropriate analysis of Gymnosperms CO3: Comprehend the basic concepts of plant ecology and taxonomy and botanical nomenclature CO4: Analyse the characteristics of different plant communities. CO5: Evaluate the significance of herbarium. CO6: Analyse the implications of biometrics, numerical taxonomy and cladistics.
3.	BS 304	Paper – III Plant Anatomy and Embryology	At the end of the course the students will be able to CO1: Understand the fundamental concepts of plant anatomy and embryology CO2: Analyze and recognize the different organs of plant and secondary growth. CO3: Examine the structure and functions of eco-system. CO4: Evaluate the structural organization of flower and the process of pollination and fertilization.

4.	BS 301	SEC – Nursery and Gardening	On completion of this course the students will be able to; CO1: Understand the process of sowing seeds in nursery. CO2: List the various resources required for the development of nursery. CO3: Distinguish among the different forms of sowing and growing plants CO4: Analyse the process of Vegetative propagation. CO5: Appreciate the diversity of plants and selection of gardening. CO6: Examine the cultivation of different vegetables and growth of plants in nursery and gardening
5.	BS 302	SEC- Biofertilizers and Organic farming	On the completion of this course, the students will be able to; CO1: Develop their understanding on the concept of bio-fertilizer. CO2: Identify the different forms of biofertilizers and their uses. CO3: Compose the Green manuring and organic fertilizers. CO4: Develop the integrated management for better crop production by using both nitrogenous and phosphate bio fertilizers and vesicular arbuscular mycorrhizal (VAM).
6.	BS 404	Paper – IV – Cell Biology, Genetics and Plant Physiology	On the completion of this course, the students will be able to; CO1: Identify the concept that explains chemical composition and structure of cell wall and membrane CO2: Compare the structure and function of cells & explain the development of cells. CO3: Have conceptual understanding of laws of inheritance, genetic basis of loci and alleles and their linkage. CO4: Comprehend the effect of chromosomal abnormalities in numerical as well as structural changes leading to genetic disorders. CO5: Develop critical understanding of chemical basis of genes and their interactions CO6: Analyse the effect of mutations on gene functions and dosage. Examine the structure, function and replication of DNA. CO7: Understand Water relation of plants with respect to various physiological processes. CO8: Explain chemical properties and deficiency symptoms in plants. CO9: Classify aerobic and anaerobic respiration.

			CO10: Explain the significance of Photosynthesis and respiration CO11: Assess dormancy and germination in plants.
7.	BS 401	SEC-3: Green house Technology	The students will be able to CO1: Identify and practice safe use of tools, equipment and supplies used in greenhouse management careers CO2: Demonstrate an understanding of the composition, fertility and biology of soil and how they relate to good plant growth CO3: Demonstrate understanding of sustainable production techniques commonly used in the greenhouse industry CO4: Describe common greenhouse design features and the materials used to build them CO5: Distinguish the various types of environmental control systems used in closed environments CO6: Apply fertilizing techniques in a closed environment system CO7: Identify the most important greenhouse pests and diseases and be able to apply biological remediation techniques
8.	BS 402	SEC-4: Mushroom culture and Technology	On completion of this course, the students will be able to: CO1: Recall various types and categories of mushrooms. CO2: Demonstrate various types of mushroom cultivating technologies. CO3: Examine various types of food technologies associated with mushroom industry. CO4: Value the economic factors associated with mushroom cultivation. CO5: Device new methods and strategies to contribute to mushroom production.
9.	BS 501	GE1 – Industrial Microbiology	After completion of the course, the students will be able to; CO1: Understand concepts of industrial microbiology. CO2: Apply the usage of microorganisms in industry. CO3: Measure the growth of microorganisms. CO4: Analyze the use of microbes in industries such as dairy and medicines. CO5: Explain the concept of fermentation. CO6: Understand the use of patent with respect to industrial microbiology.

10.	BS502	DSE1A: Biodiversity and conservation	After the completion of this course, the learner will be able to: CO1: Develop understanding of the concept and scope of plant biodiversity. CO2: Identify the causes and implications of loss of biodiversity. CO3: Apply skills to manage plant biodiversity. CO4: Utilize various strategies for the conservation of biodiversity. CO5: Conceptualize the role of plants in human welfare with special reference to India.
11.	BS502	DSE 1B: Economic Botany	On completion of this course, the students will be able to: CO1: Understand core concepts of Economic Botany and relate with environment. CO2: Develop critical understanding on the evolution of concept of organization of apex new crops/varieties, importance of germplasm diversity, issues related to access and ownership. CO3: Develop a basic knowledge of taxonomic diversity and important families of useful plants. CO4: Increase the awareness and appreciation of plants & plant products encountered in everyday life CO5: Appreciate the diversity of plants and the plant products in human use.
12.	BS502	DSE 1C: Seed Technology	After completion of the course, the students will be able to; CO1: Understand the theoretical orientation of seed development. CO2: Analyse the different ways of seed processing in different plants. CO3: Examine the various methods of Seed testing. CO4: Understand the method of seed production in different plants. CO5: Explain the concept of hybrid seed production.
13.	BS602	DSE2A: Plant Molecular Biology	On completion of this course, the students will be able to; CO1: Analyse the structures and chemical properties of DNA and RNA through various historic experiments. CO2: Differentiate the main types of prokaryotes through their grouping abilities and their characteristics. CO3: Evaluate the experiments establishing central dogma and genetic code. CO4: Gain an understanding of various steps in transcription, protein synthesis and protein modification.

14.	BS602	DSE2B: Tissue Culture and Biotechnology	On the completion of the course the students will be able to CO1: Understand the core concepts and fundamentals of plant biotechnology and genetic engineering. CO2: Develop their competency on different types of plant tissue culture. CO3: Analyze the enzymes and vectors for genetic manipulations. CO4: Examine gene cloning and evaluate different methods of gene transfer. CO5: Critically analyze the major concerns and applications of transgenic technology.
15.	BS602	DSE2C: Analytical Techniques in Plant Sciences	On completion of this course the students will be able to: CO1: Develop conceptual understanding of cell wall degradation enzymes and cell fractionation. CO2: Classify different types of chromatography techniques. CO3: Explain the principles of Light microscopy, compound microscopy, Fluorescence microscopy and confocal microscopy. CO4: Apply suitable strategies in data collections and disseminating research findings.