

Paper Code	Paper name	Course Learning Outcome
BHCC1	Microbiology and Phycology	<ul style="list-style-type: none"> Understanding of the classification, characteristic features, cell structure and growth and reproduction in viruses, bacteria, and various groups of marine and fresh water algae and their ecological and economic importance.
BHCC2	Biomolecules and Cell Biology	<ul style="list-style-type: none"> The relationship between the properties of macromolecules, their cellular activities and biological responses Understanding of Cell metabolism, chemical composition, physiochemical and functional organization of organelle Contemporary approaches in modern cell and molecular biology.
BHCC3	Mycology and Phytopathology	<ul style="list-style-type: none"> Understand the world of fungi, lichens and pathogens of plants Appreciate the characteristics of the fungi and lichens Understand the ecological and economic significance of lichen Understand the application of mycology in various fields of economic and ecological significance Understand the economic and pathological importance of fungi, bacteria and viruses Identify common plant diseases and their control measures
BHCC4	Archegoniatae	<ul style="list-style-type: none"> The students will be made aware of the group of plants that have given rise to land habit and the flowering plants. Through field study they will be able to see these plants grow in nature and become familiar with the biodiversity.
BHCC5	Anatomy of Angiosperms	<ul style="list-style-type: none"> Knowledge of various cells and tissues, meristem, epidermal and vascular tissue system in plants. Various aspects of growth, development of the tissues and differentiation of various plant organs. Knowledge of basic structure and organization of plant parts in angiosperms. Correlation of structure with morphology and functions.
BHCC6	Economic Botany	<ul style="list-style-type: none"> Impart first-hand information of plants used as food, the various kinds of nutrients available in the plants. The dietary requirements of proteins, fats, amino-acids, vitamins etc that can be met by plants. The students will learn to perform the micro-chemical tests to demonstrate various components. The students will learn about the use of fibre plants, beverages, fruits and vegetables that are integral to day-to-day life of plants. Students will learn to explore the regional diversity in food crops and other plants and their ethno-botanical importance as well.

BHCC7	Genetics	<ul style="list-style-type: none"> Inculcate interest among the students in Genetics and make them aware about the importance and opportunities in higher education and research, the first unit should be Introductory dealing with how this area has revolutionized all aspects of our life from its growth from Mendel to Genetic Engineering. Modes of inheritance of traits/ phenotypes and Phenotype-genotype correlation are the basic learning.
BHCC8	Molecular Biology	<ul style="list-style-type: none"> Understanding of nucleic acid, organization of DNA in prokaryotes and Eukaryotes, DNA replication mechanism, genetic code and transcription process. Processing and modification of RNA and translation process, function and regulation of expression. Application in biotechnology
BHCC9	Ecology	<ul style="list-style-type: none"> It acquaints the students with complex interrelationship between organisms and environment; make them understand methods to studying vegetation, community patterns and processes, ecosystem functions, and principles of phytogeography. This knowledge is critical in evolving strategies for sustainable natural resource management and biodiversity conservation
BHCC10	Plant Systematics	<ul style="list-style-type: none"> Understanding of systematics its importance in bioresource utilization and biodiversity management. Nomenclature pattern, Phylogeny, Classification systems of the plants.
BHCC11	Reproductive Biology of Angiosperms	<ul style="list-style-type: none"> Induction of flowering and molecular and genetic aspects of flower development. Pollen development, dispersal and pollination Ovule development and fertilization Endosperm development and its importance 5. alternation pathways of reproduction Student would be able to apply this knowledge for conservation of pollinators and fruit development
BHCC12	Plant Physiology	<ul style="list-style-type: none"> The students are able to correlate morphology, anatomy, cell structure and biochemistry with plant functioning. The link between theory and practical syllabus is established, and the employability of youth would be enhanced. The youth can also begin small-scale enterprises.
BHCC13	Plant Metabolism	<ul style="list-style-type: none"> Concept and significance of metabolic redundancy in plants. Students will also be able to learn the similarity and differences in metabolic pathways in animals and plants. To have understanding of water and nutrient uptake and movement in plants, role of mineral elements,

		translocation of sugars, Role of various plant growth regulators, phytochrome cytochromes and phototropins, and flowering stimulus.
BHCC14	Plant Biotechnology	<ul style="list-style-type: none"> • Learn the basic concepts, principles and processes in plant biotechnology. • Have the ability of explanation of concepts, principles and usage of the acquired knowledge in biotechnological, pharmaceutical, medical, ecological and agricultural applications. • Use basic biotechnological techniques to explore molecular biology of plants • Explain how biotechnology is used to for plant improvement and discuss the biosafety concern and ethical issue of that use.
BHDS1	Analytical Techniques in Plant Sciences	<ul style="list-style-type: none"> • Understanding of principles and use of light, confocal transmission and electron microscopy, centrifugation, spectrophotometry, chromatography, x-ray diffraction technique and chromatography techniques
BHDS4	Bioinformatics	<ul style="list-style-type: none"> • Working knowledge of the practical and theoretical concepts of bioinformatics, you will be well qualified to progress onto advanced graduate study. • The portfolio of skills developed on the programme is also suited to academic research or work within the bioinformatics industry as well as range of commercial settings.
BHDS2	Biostatistics	<ul style="list-style-type: none"> • Understanding of interpreting the scientific data that is generated during scientific experiments. It is the responsibility of biostatisticians and other experts to consider the variables in subjects to understand them, and to make sense of different sources of variation. In essence, the goal of biostatistics is to disentangle the data received and make valid inferences that can be used to solve problems in public health. Biostatistics uses the application of statistical methods to conduct research in the areas of biology, public health, and medicine. Many times, experts in biostatistics collaborate with other scientists and researchers.
BHDS3	Industrial and Environmental Microbiology	<ul style="list-style-type: none"> • To introduce students with the industrial microbiology: concepts, principles, scope and application • To introduce students with the environmental microbiology: concepts, principles, scope and application
BHDS9	Natural Resource Management	<ul style="list-style-type: none"> • It acquaints the students with various Natural Resources- their availability, causes of depletion, conservation, sustainable utilization and their management strategies. • The students will be able to evolve strategies for sustainable natural resources management. The students will also have the knowledge of national and international initiatives, and policies adopted in

		natural resources management.
BHDS8	Plant Breeding	<ul style="list-style-type: none"> • Student would be able to understand the experimental steps and methods involved in generating new varieties using classical and contemporary breeding practices.
BHSE3	Biofertilizers	<ul style="list-style-type: none"> • The student would have a deep understanding of eco-friendly fertilizers. • They will be able to understand the growth and multiplication conditions of useful microbes such as Rhizobium, cyanobacteria, mycorrhizae, Azotobactor etc, their role in mineral cycling and nutrition to plants. • The can also think of the methods of decomposition of biodegradable waste and convert into the compost
BHSE1	Ethnobotany	<ul style="list-style-type: none"> • Students would have an understanding of the treasure, value and usefulness of the natural products and their efficient use by the local communities as food and medicine and their conservation practices.
BHSE5	Floriculture	<ul style="list-style-type: none"> • Students would be able to identify the ornamental plants, they will have an understanding of cultivation methods, landscaping and making the flower arrangement.
BHSE2	Intellectual Property Rights	<ul style="list-style-type: none"> • Students would have deep understanding of patents copyrights, their importance. Thy can think about the importance of traditional knowledge, bio-prospecting, biopiracy. • They would gain the knowledge of farmers rights and the importance on indigenous plant varieties, concept of novelty and biotechnological inventions
BHSE4	Medicinal Botany	<ul style="list-style-type: none"> • An appreciation of the contribution of medicinal plants to traditional and modern medicine and the importance of holistic mode of treatment of the Indian traditional systems of medicine. • To develop an understanding of the constraints in promotion and marketing of medicinal plants. Professional and Practical Skills • Transforming the knowledge into skills for promotion of traditional medicine. • Developing entrepreneurship skills to establish value addition products, botanical extracts and isolation of bioactive compounds.
BHSE8	Mushroom Culture Technology	<ul style="list-style-type: none"> • As mushroom cultivation is a booming field Government of India is also supporting this type of work because students can learn the techniques and small scale and large-scale industries can be established by the students. • Hand on experience will be given to students so they can utilize this training in long run. In small area also they can establish the business.
BHSE7	Nursery and	<ul style="list-style-type: none"> • Students would have an understanding of How

	Gardening	nursery of the plants is prepared? How rooting is promoted in the stem cuttings? How seeds are stored and what are the soil conditions for seed sowing and seedling growth? How landscaping is designed?
BHSE9	Plant Diversity and Human welfare	<ul style="list-style-type: none"> The students would be able to judge the value of biodiversity and its role in stabilizing the climate and economy. They would know the causes and consequences of loss of biodiversity and planning of conservation strategies.
BHGE1	Biodiversity (Microbes, Fungi, Algae and Archegoniates)	<ul style="list-style-type: none"> Combination of Theoretical and Practical components will provide comprehensive information and insight into the fascinating world of Microbes and Plants. Hands on Training will help students learn use of microscope, mounting, section-cutting and staining techniques for the study of plant materials. Making Drawings in Practical Records will enhance understanding morphological and structural details and related functional aspects in diverse plant groups. Use of Illustrations, Photographs, Charts, Permanent Slides, Museum and Herbarium Specimens along with ICT Methods will provide an interesting insight into the beautiful world of microbes and plants. Scope of Biodiversity includes Medicinal field, Industry, Agriculture, Research and Study, Job Opportunities and Environmental Conservation. This paper is both informative and interesting and will enable students to learn about Biodiversity not only as a plant or nature lover, but also for higher academic pursuits, particularly in the field of Biological Sciences, Environment and Biodiversity Conservation.
BHGE7	Economic Botany and Biotechnology	<ul style="list-style-type: none"> Understanding of morphology, and processing and economic value of plant sources of cereals, legumes, spices, oil, rubber, timber and medicines
BHGE6	Environmental Biotechnology	<ul style="list-style-type: none"> Explain the various global and regional environmental concerns due to natural causes and/or human activities. Investigate some examples of different types of environmental pollution and their impacts. Describe existing and emerging technologies that are important in the area of environmental biotechnology. Demonstrate an awareness of emerging concerns such as climate change, waste management or reductions in fossil fuels, and new technologies for addressing these. Appreciate the scientific, ethical and/or social issues associated with certain applications of biotechnology for alleviating the environmental concerns. Explain national and international legislations, policies and role of public participation in Environmental Protection

		<ul style="list-style-type: none"> Students will have an insight on the causes and consequences of environmental pollution, pollutants, They can think about the prevent of degradation of environment and management of pollutants.
BHGE2	Plant Anatomy and Embryology	<ul style="list-style-type: none"> Knowledge regarding anatomy equipped the students to identify different types of tissues and make them able to correlate their physiology in a better away. This will also help them to understand how different plant tissue evolve and modify their structure and functions with respect to their environment. Knowledge regarding embryology make them understand how reproduction play significant role in defining population structure, natural diversity and sustainability of ecosystem in a better way
BHGE3	Plant Ecology and Taxonomy	<ul style="list-style-type: none"> After successful completion of the course the student shall have adequate knowledge about the basic principles of environment and taxonomy
BHGE5	Plant Physiology and Metabolism	<ul style="list-style-type: none"> The students are able to correlate morphology, anatomy, cell structure and biochemistry with plant functioning. The link between theory and practical syllabus is established, and the employability of youth would be enhanced. The youth can also begin small-scale enterprises.