B.Sc. (Hons.) Botany

PAPER NAME	COURSE LEARNING OUTCOMES
Microbiology and Phycology	Upon successfully completing the course student would be able to • Gain knowledge on bacteria, virus and alga • Utilize their knowledge gained on virus and bacteria in healthcare, agriculture and research sector. • Recognize common viral and bacterial diseases in field • Explain the difference in marine and fresh water alga, their cell structure, pigments, stored food and mode of reproduction • Understand the importance of alga in environment, agriculture and industry
Biomolecules and Cell Biology	Upon successfully completing the course student would be able to • Gain insight knowledge on the organization of cell • Explain the origin of present day cell, structure of cell organelles and their role in cellular activities • Understand the structure and properties of biomolecules and their role in cellular metabolism. • Gain theoretical and practical knowledge of various cellular phenomenon
Biodiversity (Microbes, Algae, Fungi and Archegoniates)	Upon successfully completing the course student • Gain information about the fascinating world of microbes and plants • Understand the evolution of plant on earth • Developed interest toward the environment and biodiversity conservation
Plant Anatomy and Embryology	Upon successfully completing the course student • Gain knowledge about plant internal structure, different stages of plant growth and differentiation • Understand the plant cellular composition and reproduction • Able to correlate its structure with its function • Can explain the evolution of tissues, plant structure and function with respect to its environment
Mycology and Phytopathology	Upon successfully completing the course student would be able to • Understand the world of fungi, identify and classify them • Explain the different types of symbiotic association of fungi and its importance • Recognize common viral, bacterial and fungal diseases in field • Understand the application of fungi in food, medicine and agriculture sector
Archegoniatae	Upon successfully completing the course student would • Became aware of the group of plants that have given rise to land habit and the flowering plants • Able to explain primitive and advanced conducting tissues in plants • Identify these plants in their natural habitat • Understand their ecological and economic significance • Sensitize to conserve these group of plants
Plant Ecology and Taxonomy	Upon successfully completing the course student will • Understand the complex interrelationship between organisms and its

	environment and plant nomenclature system • Able to explain the methods used to study vegetation and plant community • Identify some common flowering plants • Understand strategies for biodiversity conservation
Anatomy of Angiosperms	Upon successfully completing the course student will • Understand the basic structure and organization in plant parts • Gain knowledge on various aspects of growth and differentiation in plants • Understand the various cells, tissue and tissue system in plants • Able to correlate plant structure with its function
Economic Botany	Upon successfully completing the course student will • Gain information on plants used as fodder, food, feed, medicine etc. • Get to know the concept of Center of Origin in cultivated plants • Became familiar with different processing methods used to obtain plant based products • Understand the plant morphology and cultivation process
Genetics	Upon successfully completing the course student will • Gain knowledge on gene structure and function • Understand the transmission of characters from parent to progeny • Correlate the genes with the process of sex determination and pedigree analysis, and mutation based diseases • Utilize this knowledge in higher education and research
Plant Diversity and Human Welfare	Upon successfully completing the course student will • Understand the importance of biodiversity and its relevance to climate change • Become aware of different conservation strategies made at national and international level for • Capable of developing strategies for biodiversity conservation
Ethnobotany	Upon successfully completing the course student will • Have understanding of the plants used by tribals and local communities in medicine and nutrition • Also gain knowledge about the different conservative practices followed by these ethnic groups • Develop the skills in identification of most of these medicinal plants and will be able to utilize in field of herbal medicine
Plant Physiology and Metabolism	Upon successfully completing the course student will • Understand the relation of plant morphology and anatomy to the functioning of plant system • Gain knowledge on various metabolic processes in plant and their importance • Understand the role of different phytohormones and flowering stimulus • Able to explain the mechanism of uptake of water and nutrients by plant • Can apply the knowledge gained on light, nutrient and hormone importance, in cultivating healthy plants
Molecular Biology	Upon successfully completing the course student will • gain the knowledge of nucleic acid structure and functions • Understanding of nucleic acid, organization of DNA in prokaryotes and Eukaryotes • Utilize this knowledge in higher education and research

Ecology	Upon successfully completing the course student will • Understand the complex interrelationship between organisms and environment • able to explain the methods used to study vegetation and community • capable of designing strategies for sustainable natural resource management and biodiversity conservation
Plant Systematics	Upon successfully completing the course student will • Understand the plant taxonomy • Gain knowledge of plant phylogeny • Able to explain plant nomenclature system • Identify most of the flowering plants growing in field
Biofertilizers	Upon successfully completing the course student will • Understanding about these eco-friendly fertilizers • Gain knowledge on conditions required for the growth and multiplication of these microorganisms • Able to utilize the knowledge gain for developing methods for decomposition of organic waste
Medicinal Botany	Upon successfully completing the course student will • Gain knowledge about alternative medicine approach • Become aware about the rich medicinal plant biodiversity in India • Able to utilize his skill in promoting holistic treatment approach involving modern medicine system with traditional one
Mushroom Cultivation and Technology	Upon successfully completing the course student will • Understand the mushroom growing technique • Gain knowledge about the medicinal and nutritional value of mushroom • Utilize this knowledge in establishing small scale or large scale industries
Economic Botany and Biotechnology	Upon successfully completing the course student will • Understand the plant morphology and cultivation process • Became familiar with different processing methods used to obtain plant based products, concept of Center of Origin in cultivated plants • Understand the various biotechnological tools and techniques used in plant science • Able to explain the importance of transgenic crops in global food security
Reproductive Biology of Angiosperms	Upon successfully completing the course student will • Have knowledge of reproductive, flowering and fruiting processes in plant • Will be able to apply the knowledged gain in conservation of plants and their pollinators as wellAuqaint knowledge of different invite and invivo pollination mehanisms in plants and will be able to apply them to obtain desirable hybrids
Plant Physiology	Upon successfully completing the course student will • Understand the functioning of plant system • Understand the role of different phytohormones and flowering stimulus • Able to explain the mechanism of uptake of water and nutrients by plant Can apply the knowledge gained on light, nutrient and hormone importance, in cultivating healthy plants
Analytical Techniques in Plant Science	Upon successfully completing the course student will • Gain aquaintaince on various instruments and techniques used in plant science

	• Utilize this knowledge in higher education and biological research
Natural Resource Management	Upon successfully completing the course student will • Gain knowledge of various natural resources, their availability and depletion • Become aware of different policies or efforts made at national and international level for natural resourse conservation • Capable of developing strategies for sustainable management of natural resources • Understand the concept of sustainable development and its importance in present day
Biostatistics	Upon successfully completing the course student will • Able to analyse biological data • Collaborate with researchers to analyse their research data • Capable of interpreting large population data related to public health
Plant Metabolism	Upon successfully completing the course student will • Gain knowledge on various metabolic processes in plant and their importance • Able to explain the mechanism of carbohydrate and energy generation in plant • Correlate the plant morphology and anatomy to its functioning
Plant Biotechnology	Upon successfully completing the course student will • Understand the various biotechnological tools and techniques • Able to explain the importance of transgenic crops in global food security • Use the gained practical and theoretical knowledge in pharmaceutical and agriculture sector • Utilize this knowledge in higher education and research
Industrial and Environmental Microbiology	Upon successfully completing the course student will • Able to understand the application of microbiology in industrial processes • Understand the concept of environment microbiology and its application in solving environmental issues Know the bioreactor designing, process of fermentation and importance of sterilization • Have hands on knowledge of different methods used to determine water quality
Bioinformatics	Upon successfully completing the course student will • Gain knowledge of various biological resources available and their usage in research • Developed the skill of biological data analysis and retrieval • Utilize their skill in higher education, biological research and bioinformatics industry like drug designing, genomics
Plant Breeding	Upon successfully completing the course student will • Knowledge about commercially important plants and their breeding methods • Able to correlate the relation of genes and commercially important characters in plant • Understand the strategies that can be used in a crop improvement program