Yogoda Satsanga Mahavidyalaya

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(NACC Accredited, Grade: B++, CGPA: 2.89)

CORE COURSE OUTCOME OF BOTANY HONOURS PROGRAMME BASED ON CBCS CURRICULUM

Semester	Course code	Course name	Course outcome
I	CC1	Algae and Microbiology	• Understand the diversity among Algae. • Know the systematic, morphology and structure and thallus origination of Algae. • Understand the life cycle of Algae. • Understand the useful and harmful activities of Algae. • Understand the discovery , types and structure of virus and Bacteria • They understand conjugation, transformation and transduction • Economic importance of Algae and microbiology
	CC2	Biomolecules and Cell Biology	• They will learn about the Carbohydrates, Lipids,Protein and Nuclic acid. • Understand the properties of Monosaccharides, Oligosaccharides and Polysaccharides. • They also develop a fair understanding of Structure of nitrogenous bases, nucleotides, types of nucleic acids, Structure of A, B, Z types of DNA, types of RNA • Students gain knowledge about the cellular organisation and its complexities. • To understand the cellular compartmentalisations, their structure, functions and biological significance and phases of cell cycle, cell division.
II	AECC	Environmental Studies	• Students learn about the concept and benefits of a sustainable environment • They learn about biodiversity and bio conservations. • They get aware of natural resources and their limitations. • They also get aware of pollution and its prevention measures.

			• They learn about the environmental policies, their implications and their repercussions. • They are familiar with various environment-related activities and movements
	CC3	Mycology and Phytopathology	• Understand the Biodiversity of Fungi • Know the thallus origination of fungi • Know the Economic Importance of Fungi • Know the terminologies in plant pathology. • Understand the scope and importance of Plant Pathology. • Know the prevention and control measures of plant diseases and its effect on economy of crops
	CC4	Archegoniate	• Understand the morphological diversity of Bryophytes. • Understand the economic importance of the Bryophytes. • Know the taxonomic position, occurrence, thallus structure, reproduction of Bryophytes.
III	SEC1	Elementary computer application software	In this fast-growing Information Technology era, knowledge of computer applications is vital for growth and development. • Students are aware of basic computer systems and their operations. • They develop basic software skills like Microsoft Office (Word, PowerPoint and Excel) to enable them for day-to-day needs. • In a recent pandemic, computer knowledge has helped them to opt for an online mode of learning.
	CC5	Morphology and Anatomy	• Understand the plant morphology and basic taxonomy • Know the vegetative characteristics of the plant. • Understand the habit of the angiosperm plant body. • Understand the scope & importance of Anatomy. • Know various tissue systems. • Understand the normal and anomalous secondary growth in plants and their causes. • Perform the techniques in anatomy
	CC6	Economic Botany	• Understand the role of plants in human welfare. • Gain knowledge about the various plants of economic use. • Know importance of plants & plant products.

			• Understand the chemical contents of the plant products. • Know about the utility of plant resources
	CC7	Genetics	• Mendelian and Neo-mendelian genetics • To study the phenomenon of dominance, laws of segregation, independent assortment of genes. • To understand the different types of genetic interaction, incomplete dominance, codominance, inter allelic genetic interactions, multiple alleles and quantitative inheritance etc.
IV	SEC 2	Mushroom Culture Technology	• Know about history, Nutritional and medicinal value of edible mushrooms • To understand Cultivation Technology of mushroom • To know storage and Food Preparation of mushrooms
	CC8	Molecular Biology	On completion of the course, students are able to Understand the following • Know about the genomic organization or living organisms, study of genes genome, chromosome etc. • Understand the biochemical nature of nucleic acids, their role in living systems, experimental evidences to prove DNA as a genetic material. • Understand the process of synthesis of proteins and role of genetic code in polypeptide formation
	CC9	Plant Ecology and Phytogeography	• Know the scope and importance of the discipline. • Understand plant communities and ecological adaptations in plants. • Learn about Biotic interaction, population ecology, Ecosystem and its fictional aspects. • Understand the principal of phytogeography
	CC10	Plant Systematics	• Know the concept of methodology in taxonomy and terminology • Know the conceptual development of taxonomy and systematics • History of development of systems of classification emphasizing angiospermic taxa. • To learn the wide activities in angiosperm and trends in classification. • Understand various rules, principles and recommendations of plant nomenclature in plant identification. • Learn about the characters of biologically important families of angiosperms

V	DSE1	Horticultural Practices & Post Harvest Technology	• Understand the scope and importance, of Horticulture. • Know the ornamental plants and their identification. • Understand the management and marketing of fruit and vegetable crops. • Know the Horticultural techniques. • Know the conservation and management of horticultural crops, disease control and post harvest technology
	DSE2	Analytical Techniques in Plant Science	• Understand the methods used of imaging and related techniques and Microphotography • Understand & perform Chromatography and cultural techniques in Botany.
	CC11	Reproductive Biology of Angiosperms	• Know the contribution of scientists and scope in reproductive biology • Know about the reproductive development of flowering plants • Understand pollination and fertilization. • Know self incompatibility in plants.
	CC12	Plant Physiology	• Understand the plant water relation • Know the mineral nutrition in plants • Understand the translocation in phloem • Know about the plant growth regulators • Know about the Phytochrome etc.
VI	DSE3	Plant Breeding	• On completion of the course, students are able to • Understand the science of plant breeding. • To study the techniques of production of new superior crop verities • Get the detail knowledge about modern strategies applied in Plant Breeding for crop improvement i.e. Mass selection, Pureline Selection and Clonal selection. • Know about exploitation of Heterosis, hybrid and variety development and their release through artificial hybridization.
	DSE4	Research Methodology	• Research-definition and types of research • Understand the details on the label of reagent bottles and lab practices • Know about the data collection and documentation • Understand the Plant microtechniques. • Know the the art of scientific writing and its presentation

	CC13	Plant Metabolism	• Understand the process of photosynthesis in higher plants with particular emphasis on light and dark reactions, C3 and C4 pathways. • Understand the respiration in higher plants with particular emphasis on aerobic and anaerobic respiration • Know the lipid and Nitrogen metabolism • Understand the mechanism of signal transduction in plant
	CC14	Plant Biotechnology	• Understand the fundamentals of Recombinant DNA Technology. • Know about the Genetic Engineering. • Understand the principle and basic protocols for Plant Tissue Culture. • The concept of operon and its structure and regulation.

GENERAL ELECTIVE OUTCOME OF BOTANY FOR OTHER SUBJECTS

Semester	Course code	Course name	Course outcome
I	GE 1	Biodiversity	• Students get aware of the diversity of Plant kingdoms. • They learn about the– Discovery, general structure, replication of Virus, Bacteria. • They also develop a fair understanding of the evolution of organisms across the kingdom. • They are familiar with General characteristics; Ecology and distribution; Range of thallus organization and reproduction; Classification of algae and their life cycle. • They get an introduction to the General characteristics, ecology and significance, range of thallus organization, cell wall composition, nutrition, reproduction and classification of fungi, bryophyte and Pteridophyta. • They are familiar with many species of Algae, Fungi, Pteridophyta, Bryophyta and Gemenosperm. • They gain the knowledge of economic importance of lower plants.

II	GE 2	Plant Ecology & Taxonomy	• They know the Ecological factors, Adaptation of hydrophytes and xerophytes. • They know Processes and types of Succession. • They know the significance of Structure of energy flow in different tropic level. • They gain biogeographical zones and Endemism. • Students know the concept of taxonomy and its terminology • Understand various rules, principles and recommendations of plant nomenclature produces in plant identification. • Learn about the characters of biologically important families of angiosperms
III	GE 3	Plant Anatomy & Embryology	• This provides an understanding of various components of apical meristems, Simple and complex tissues • This course enables the student to think about vascular system and adaptive and protective systems in plants. • Know the contribution of scientists and scope in reproductive biology • Know about the reproductive development of flowering plants • Understand pollination and fertilization in plants
IV	GE 4	Plant Physiology & Metabolism	• Understand the plant water relation • Know the mineral nutrition in plants • Understand the translocation in phloem • Know about the plant growth regulators • Understand the process of photosynthesis in higher plants with particular emphasis on light and dark reactions, C3 and C4 pathways. • Understand the respiration in higher plants with particular emphasis glycolysis, TCS Cycle and aerobic and anaerobic respiration • Know the Nitrogen metabolism