

4. PROGRAM OUTCOMES(POs)&COURSE OUTCOMES (COs):

Program outcomes of B.Sc.	
After completion of three-year graduation student acquire the following attributions	
PO1	The B. Sc. Programme develops scientific temperament and attitude among the science graduates
PO2	The qualities of a science – observation, precision, analytical mind, logical thinking, clarity of thought and expression, systematic approach, qualitative and quantitative decision making are enlarged.
PO3	The program also empowers the graduates to appear for various competitive examinations or choose the post graduate programme of their choice .
PO4	This programme trains the learners to extract information, formulate and solve problems in a systematic and logical manner
PO5	This programme enables the learners to perform the jobs in diverse fields such as science, engineering, industries, survey, education, banking, development-planning, business, public service, self-business etc. efficiently
PO6	Students will be able to acquire core knowledge in Physics in the key areas, develop written & oral communication skills in communicating physics-related topics.
PO7	Design & conduct an experiment, demonstrate their understanding of the scientific methods & processes
PO8	Develop proficiency in acquiring data using a variety of instruments, analyze & interpret the data, learn applications of numerical techniques
PO9	Realize & develop an understanding of the impact of Physics & science on society.
PO10	Students will be able to acquire core knowledge in Physics in the key areas, develop written & oral communication skills in communicating physics-related topics.

Course Out Come B.Sc Botany

SEM-I Microbial Diversity of Lower Plants	
CO1	<p>Understand the morphological diversity of Bryophytes and Pteridophytes and Gymnosperms.</p> <p>Understand the economic importance of the Bryophytes and Pteridophytes and Gymnosperms.</p> <p>Know the vegetative characteristics of the plant.</p> <p>Learn about the reproductive characteristics of the plant.</p> <p>Understand the plant morphology and basic taxonomy..</p>
CO2	<p>Know the evolution of Bryophytes and Pteridophytes and Gymnosperms.</p> <p>Understand the habit of the angiosperm plant body.</p>
CO3	<p>Know the evolution of Bryophytes and Pteridophytes and Gymnosperms.</p> <p>Understand the habit of the angiosperm plant body</p> <p>.</p>
SEM-II : Gymnosperms and Taxonomy of Angiosperms	
CO1	<p>Know the general characteristics of Gymnosperms and their distribution and life cycles.</p>
CO2	<p>Understand the principles of classification systems and current concepts in Taxonomy.</p>
CO3	<p>Develop the technical knowledge of Herbarium preparation.</p>
CO4	<p>Develop the application skills in the identification of plants belonging to different families.</p>
SEM-III PLANT ANATOMY AND EMBRYOLOGY	
CO1	<p>Meristems: Types, histological organization of shoot and root apices and theories. 1. Tissues and Tissue Systems: Simple, complex and special tissues. 2. Leaf: Ontogeny, diversity of internal structure; stomata and epidermal outgrowths.</p>
CO2	<p>. Stem and root anatomy: Vascular cambium - Formation and function. 5. Anomalous secondary growth of Stem -Achyranthes, Boerhaavia, Bignonia, Dracaena; Root— Beta vulgaris. 6. Wood structure: General account. Study of local timbers — Teak (Tectona grandis), Rosewood, (Dalbergia latefolia), Red sanders, (Pterocarpus santalinus) Nallamaddi (Terminalia tomentosa) and Neem (Azadirachta indica).</p>
CO3	<p>7. History and importance of Embryology. 8. Another structure, Microsporogenesis and development of male gametophyte. 9. Ovule structure and types; Megasporogenesis; types and development of female gametophyte</p>

SEM-IV CELL BIOLOGY AND PLANT PHYSIOLOGY	
CO1	Models of membrane structure, Functions, fluidity and Selective permeability of the membranes. 2. Cell Organelles: Structure and semiautonomous nature of Mitochondria and Chloroplast. 3. Structure and role of endoplasmic reticulum, ribosomes, golgi complex, lysosomes, peroxisomes and glyoxisomes.
CO2	Nucleus: Ultra structure, types and functions of DNA & RNA. 4. Chromosomes: Morphology, organization of DNA in a chromosome, Euchromatin and Heterochromatin, Karyotype. Special types of chromosomes: Lampbrush and Polytene chromosomes. 5. Extra nuclear genome: Mitochondrial DNA and Plastid DNA.. Plasmids. 8. Cell division: Cell and its regulation; mitosis, meiosis and their significance
CO3	Plant -Water Relations: Physical properties of water, diffusion, imbibitions, osmosis; osmotic and pressure Potential, absorption and transport of water. 10. Mineral Nutrition: Essential macro and micro mineral nutrients, and symptoms of mineral deficiency. 11. Transpiration; Stomatal structure and movement. Mechanism of phloem transport. Mechanism of phloem transport. 12. Enzymes: Nomenclature, Characteristics, Classification and factors regulating enzyme activity.
CO4	Photosynthesis: Photosynthetic pigments, Mechanism of photosynthetic electron transport and evolution of oxygen, Photophosphorylation . Carbon assimilation pathways: C3, C4 and CAM. 14. Respiration: Aerobic and Anaerobic; Glycolysis, Krebs cycle and electron transport system. 15. Nitrogen Metabolism: Biological nitrogen fixation 16. Physiological effects of Phytohormones: Auxins, gibberellins, cytokinins, ABA, ethylene and Brassinosteroid
SEM-V BIODIVERSITY AND CONVERSATION	
CO1	Explanation on the aim and scope of taxonomy , Binomial system, chemotaxonomy, cytotaxonomy, numerical taxonomy and application of computers
CO2	Explain Engler and Prantle system of classification and their economic importance
CO3	Study of different characteristic of plants like Cucurbitaceae, Apiaceae, Rubiaceae, Asteraceae, Asclepidiaceae, Acanthaceae and Lamiaceae, including monocotyledoneae families
SEM-VI TISSUE CULTURE AND BIOTECHNOLOGY	

CO1	Explain the discovery, totipotency, tissue culture techniques, sterilization methods, micropropagation,
CO2	Define and explain the applications of tissue culture, synthetic seeds, cryopreservation
CO3	study on applications of Biotechnology and genetic engineering
CO4	A study on importance of transgenic. Applications of transgenic in crop improvement.