

Department of BOTANY						
Academic Calender and Academic Plan						
1st Semester General Course (July 2018 - Dec 2018) CC / GE / GEH						
Name of the paper	Module	Topic	Name of the teacher	To be Completed during the month and year	No of PPT classes	Continuous Internal Assesment in which month
CC1	INTRODUCTION	Introduction to different plant groups	AS	Jul-18		YES
	PHYCOLOGY	Classification, Life History, Role of Algae	SR	Sep-18		
	MYCOLOGY	Diagnostic Characters, Life History, Economic Importance, Fungal Symbioses	PS	Nov-18		

	PHYTO-PATHOLOGY	Symptoms, Koch's Postulates, Biotrophs and Necrotrophs, Disease triangle, Pathotoxins and Phytoalexins, Certain Plant Diseases	AS	Nov-18	
	BRYOPHYTES	Unifying features, amphibian nature, diagnostic characters, life history, ecological and economic importance	PS	Sep-18	
	ANATOMY	Types of Stomata, anatomy of root, stem and leaves of monocots and dicots, stelar types and evolution, secondary growth	SR	Nov-18	
Course Outcome	<p>To study the diagnostic characters of different algal groups with their appropriate examples. To study the diagnostic characters of different fungal groups according to Ainsworth's classification with their appropriate examples. Life history of fungal and algal species. Conceptual model that shows the interactions between the environment, the host and an infectious (or abiotic) agent.</p> <p>To study in detail the role of a chemical of biological origin, other than an enzyme in a plant disease and the role of broad spectrum inhibitors produced by plants in plant disease management. Typical characteristics of plants to be able to survive in both land and water. To study the diagnostic characters of different groups of bryophytes with their appropriate examples.</p> <p>Life history of different groups of bryophytes showing gametophytic and sporophytic variation</p> <p>To study the economic importance of different species of bryophyte.</p> <p>The detailed anatomical features of typical monocot and dicot root, stem and leaves</p> <p>The different types of stele observed and their evolution with plant types</p> <p>The different secondary (normal and anomalous) features observed in different plants</p>				
2nd Semester General Course (Jan 2019 - June 2019) CC / GE / GEH					

Name of the paper	Module	Topic	Name of the teacher	To be Completed during the month and year	No of PPT classes	Continuous Internal Assessment in which month
CC 2	PTERIDOPHYTES	Diagnostic Characters, Life History, Economic Importance	AC	Apr-19		YES
	GYMNOSPERMS	Progymnosperms, Diagnostic Characters, Life History, <i>Williamsonia</i> (reconstructed), Economic Importance	SR	Apr-19		YES
	PALAEOBOTANY AND PALYNOLOGY	Fossils, Importance of Fossils, Geological time scale, Palynology	AS	Apr-19		YES

	ANGIOSPERM MORPHOLOGY	Inflorescence types, Flowers, Fruits and Seeds	PS	Mar-19		YES
	TAXONOMY OF ANGIOSPERMS	Artificial, Natural and Phylogenetic Systems of Classification, Diagnostic features of certain plant families	PS	Apr-19		YES
Course Outcome	<p>To study the diagnostic characters of different groups of pteridophytes according to Gifford and Foster's classification with their appropriate examples</p> <p>Life history of different groups of pteridophytes showing gametophytic and sporophytic variation and different evolutionary forms of their reproductive structures. Progymnosperms having affinities on both side i.e. pteridophytes and gymnosperms, the chapter says about seed plants where seed is uncovered and presence of cone is significant.</p> <p>To study the diagnostic characters of different groups of gymnosperms according to Gifford and Foster's classification with their appropriate examples</p> <p>Life history of different groups of pteridophytes showing gametophytic structural developments and different evolutionary forms of their reproductive structures i.e cone.</p> <p>To get a brief idea about the reconstructed genus of gymnosperms.</p> <p>To study the economic importance of different species of gymnosperms. Brief idea about fossils, process of fossil formation and the factor responsible for fossilization</p> <p>Brief idea about the necessity of fossil study. A generalized idea about the geological time scale and the evolution of living beings based on this time scale.</p> <p>A brief idea of palynology with special mention of spore and pollen study and application of palynology in our daily lives</p> <p>A detailed outline of the different types of inflorescence present in plants with appropriate examples.</p> <p>An overview of atypical flower and the other different types of flowers found in plants due to evolution.</p> <p>A detailed outline of different types of fruits and seeds present in plants with appropriate examples. An overview of the different systems of classification of angiosperms. A detailed study of the diagnostic characteristic features of different plant families.</p>					
3rd Semester General Course (July 2019 - Dec 2019) CC / GE / GEH						

Name of the paper	Module	Topic	Name of the teacher	To be Completed during the month and year	No of PPT classes	Continuous Internal Assessment in which month
CC 3	CELL BIOLOGY AND GENETICS	Ultrastructure of- Nuclear envelope, nucleolus, Molecular organization of metaphase chromosomes,	SR	Sep-19		YES
		Chromosomal aberrations, central dogma, genetic code, Linkage group and genetic map, Mutation,	PS	Aug-19		
		Split gene, Transposon	SR	Sep-19		

	MICROBIOLOGY	Viruses	AC	Aug-19		YES
		Bacteria	AC	Sep-19		
Course Outcome	<p>The detailed outline of the ultrastructure of nucleus is studied and a clear idea of nuclear envelope, nucleolus and their functions is analyzed. A clear idea of how metaphase chromosomes organize themselves in the nucleus during cell division is studied at the molecular level. Chromosomal number, character variation and its implication in the structural behavior is discussed.</p> <p>Central dogma is dealt with DNA replication, transcription and translation. It describes copy of DNA formation, formation of mRNA from DNA and from mRNA to protein. Triplet code of genes, concept of purine, pyrimidine bases and nature of genetic code like non-overlapping, unambiguous etc. are the matters concerned. Crossing over between sister Chromatids, linked gene concept, genetic distance and its mapping in terms of linkage. The effects of external factors in terms of physical mutagen and chemical mutagen is aptly described. A brief concept of interrupted gene containing interrupted sections of exons and interrupted sections of introns and about a transposable element, a DNA sequence that can change its genome altering the cell's genetic identity.</p> <p>A detailed study of the discovery, structure and replication of viruses with special mention to DNA virus T-phage. A thorough idea of lytic and lysogenic cycle of viruses is studied at the molecular level. A detailed outline of RNA virus of plant –TMV virus is studied. Economic importance of viruses is also discussed.</p> <p>A detailed study of the discovery, general characteristics and cell structure of bacteria is studied. Reproduction of bacteria by vegetative and sexual and recombination methods is studied with detailed outline of conjugation, transformation and transduction. Economic importance of bacteria is also discussed.</p>					
3rd Semester General Course (July 2019 - Dec 2019) SEC						

Name of the paper	Module	Topic	Name of the teacher	To be Completed during the month and year	No of PPT classes	Continuous Internal Assessment in which month
SEC	PLANT BREEDING AND BIOMETRY	Plant Breeding	SR	Aug-19		YES
		Mass and Pureline Selection		Aug-19		
		Biometry		Sep-19		
Course Outcome	Crossing in between plants for the improvement of crop productivity and agricultural benefits. It deals with the counting method of plant sample, different allied tests, probable equations and its description in terms of gene and genetic drift within any population.					
4th Semester General Course (Jan 2020 - Jun 2020) CC / GE / GEH						

Name of the paper	Module	Topic	Name of the teacher	To be Completed during the month and year	No of PPT classes	Continuous Internal Assessment in which month
	PLANT PHYSIOLOGY AND METABOLISM	Proteins	SS	Mar-20		NO
		Transport in plants	AC	Apr-20		NO
		Transpiration	PS	Mar-20		NO

CC4	Photosynthesis, Respiration, Nitrogen Metabolism	PS	Apr-20		NO
	Plant Growth regulators	SR	Mar-20		NO
	Photoperiodism	SR	Apr-20		NO
	Senescence	SS	Apr-20		NO

Course Outcome	<p>Responsible molecules i.e. protein for life and its mutual arrangement towards the body make up deals with this module.</p> <p>With the help of xylem and phloem tissue i.e. conducting tissue plant water continuum is established through the ascent of sap where cohesion-adhesion force has typical role. Organic substances are translocated throughout the body parts of the plants with the aid of phloem loading and unloading. The role of stomata in plants in maintaining the water balance of the plant body is studied in this module.</p> <p>This includes anabolic metabolism by which plant can synthesize its own food with the help of green chlorophyll and in the presence of sunlight. This encompasses catabolic metabolism by which energy is released to break down the prepared food by photosynthesis.</p> <p>It refers to atmospheric nitrogen fixation in the soil and utilization of this nitrogen in different compatible forms by bio-geo-chemical cycle. Plant hormones are specially growth regulators and also control flowering, fruit ripening, senescence, ageing etc. The relation of light plant life cycle is dealt in this module.</p> <p>One of the phytohormones i.e. Cytokinin is significantly responsible in relation with delaying senescence and it also correlates ageing process.</p>					
4th Semester General Course (Jan 2020 - Jun 2020) SEC						
Name of the paper	Module or Unit No	Topic	Name of the teacher	To be Completed during the month and year	No of PPT classes	Continuous Internal Assessment in which month
SEC	PLANT BIOTECHNOLOGY	Plant Tissue Culture	SR	Apr-20		NO
SEC		Micropropagation	SR	Apr-20		NO
SEC		Protoplast Culture and its Application	SS	Apr-20		NO

SEC	Recombinant DNA Technology	AC	Apr-20	NO
SEC	Gene Cloning	SR	Apr-20	NO
SEC	Achievements in Crop Biotechnology	PS	Apr-20	NO
Course Outcome	<p>Regeneration and degeneration of tissues to form new plant life in vivo i.e. within the laboratories.</p> <p>A set of experimental methods used to assemble recombinant DNAmolecules and to direct their replication within host organisms.</p> <p>Development of expert methods to form new organisms or new plant life with better genetic identity.</p>			