



# গড়গাঁও মহাবিদ্যালয় GARGAON COLLEGE

**TEACHING PLAN**  
**DEPARTMENT OF BOTANY**  
**JULY 2020 - JUNE 2021**

### Teaching Plan

Name of the Teacher: Mrs. Joya Saikia Goswami; Designation: Associate Professor; Session: AUG - DEC 2020

Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Teaching Methodology	Work Load	Learning Outcome
1	I	Microbiology and Phycology	HONS	C 1	Unit 4: Algae Unit 5: Cyanophyta, Chlorophyta, Xanthophyta and Charophyta Unit 6: Phaeophyta and Rhodophyta	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	8 Hrs/week	The objective of this course is to provide knowledge to the students on various forms of microbes and algae - their characteristics and economic importance.
		Biomolecules and Cell Biology	HONS	C 2	Unit 1: Biomolecules Unit 2: Bioenergetics Unit 3: Enzymes	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips		The objective of this course is to expose the students on molecular organisations life and also discusses cellular and molecular processes of life.
		Biodiversity (Microbes, Algae, Fungi, Lichen and Archegoniate)	HONS	GE 1	Unit 5: Introduction to Archegoniate Unit 6: Bryophytes Unit 7: Pteridophytes Unit 8: Gymnosperms	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests.		The objective of this course is to expose the students to different forms of plant life

2	III	Anatomy of Angiosperms	HONS	C 5	<p>Unit 1: Introduction and scope of Plant Anatomy</p> <p>Unit 2: Structure and Development of Plant Body .</p> <p>Unit 3: Tissues</p> <p>Unit 4: Apical meristems secondary growth in root and stem. Sapwood and heartwood; Ring and diffuse porous wood; Early and late wood, Dendrochronology. Development and composition of periderm, rhytidome and lenticels.</p> <p>Unit 5: Adaptive and Protective Systems anatomical adaptations of xerophytes , hydrophytes and epiphytes.</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	12 Hrs/Week	The objective of this course is to expose the students on the structural and anatomical organizations of plant tissues and their development
		Economic Botany	HONS	C 6	<p>Unit 1: Origin of Cultivated Plants</p> <p>Concept of Centres of Origin, their importance with reference to Vavilov's work. Indigenous Knowledge System (IKS). Examples of major plant introductions; Crop domestication and loss of genetic diversity; evolution of new crops/varieties, importance of germplasm diversity.</p> <p>Unit 2: Cereals: Wheat and Rice (origin, morphology, processing &amp; uses)</p> <p>Unit 3: Legumes: Origin, morphology and uses of Chick pea, Pigeon pea and fodder</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips		The objective of this course is to expose the students on various economically important plants and plant products

					<p>legumes. Importance to man and ecosystem.</p> <p>Unit 4: Sources of sugars and starches: Morphology and processing of sugarcane, products and by-products of sugarcane industry. Potato – morphology, propagation &amp; uses.</p> <p>Unit 5: Spices: Listing of important spices, their family and part used. Economic importance with special reference to fennel, saffron, clove, cinnamommum, cardamom and black pepper</p> <p>Unit 6: Beverages: Tea, Coffee (morphology, processing &amp; uses)</p>			
		Plant Ecology and Taxonomy	GENERIC	GE 3	<p>Unit 1: Introduction</p> <p>Unit 2: Ecological factors</p> <p>Soil: Origin, formation, composition, soil profile.</p> <p>Water: States of water in the environment, precipitation types. Light and temperature: Variation Optimal and limiting factors; Shelford law of tolerance. Adaptation of hydrophytes and xerophytes</p> <p>Unit 3: Plant communities Characters; Ecotone and edge effect; Succession; Processes and types</p> <p>Unit 4: Ecosystem</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests.		The objective of this course is to expose the students to interaction of plant life with the surroundings and also to identification, classification and nomenclature of plants

					Unit 5: Phytogeography			
		Basics of Vermicomposting	HONS	SEC 1.1	Unit 1: Introduction to vermiculture Unit 2: The species of earthworms Unit 3: Biology of earthworms	Lecture Method, Audio-Visual Aids, Practical based classes and Field Trips	3 Hrs/Week	To impart knowledge of the vermicompost and the Economic importance of vermiculture. The students will be able to produce good quality of Vermicompost and Vermiculture. Acquire skills for entrepreneurship

3	V	Development and Reproduction in Angiosperm	MAJOR	501	<p><b>Development in Angiosperm</b>  Unit–1: Organisation of tissues: Types of tissues, Meristematic and permanent, their types, structures, distribution and functions; theories of differentiation of roots and shoots.  Unit –2: Stele Body – origin and development, Root – stem transition, leaf traces and leaf gaps, branch gaps, abscission layer.  Unit –3: Secondary structures of roots and stems, initiation of cambium and its activities. 4 class hours  Unit–4: Anomalous secondary growth in thickness (<i>Amaranthus</i>, <i>Asparagus</i>, <i>Boerhavia</i> and <i>Mirabilis</i>).  Unit–5: Anatomico–physiological consideration of dermal, mechanical, conducting and photosynthetic system of tissues; anatomy of C3 and C4 plants.</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests.	12 Hrs/Week	To provide fundamental knowledge of structural and functional aspects of cell and cell organelles and the tools and techniques used in modern biological study
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			MAJOR	<p><b>Reproduction in Angiosperm</b>  Unit –1: A general account of the following topics:  Development of male and female gametophyte of angiosperms; monosporic, bisporic&amp;tetrasporicembryosac.  Unit –2: Fertilization, development of embryo; Apomixis, polyembryony, Palynology.  Unit –3: Development of Endosperm – nuclear, cellular, helobial; haustorial structures.</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests.	
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### Teaching Plan

Name of the Teacher: Dimbeshwar Das; Designation: Assistant Professor; Session: AUG - DEC 2020

Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Teaching Methodology	Work Load	Learning Outcome
1	I	Microbiology and Phycology	HONS	C 1	Unit 1: Introduction to microbial world Unit 2: Bacteria Unit 3: Viruses	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	8 Hrs/week	The objective of this course is to provide knowledge to the students on various forms of microbes and algae - their characteristics and economic importance.
		Biomolecules and Cell Biology	HONS	C 2	Unit4: The cell, Cell wall and plasma membrane Unit 5: Cell organelles Unit 6: Cell division	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips		The objective of this course is to expose the students on molecular organisations life and also discusses cellular and molecular processes of life.
		Biodiversity (Microbes, Algae, Fungi, Lichen and Archegoniate)	HONS	GE 1	Unit 1: Microbes Unit 2: Algae Unit 3: Fungi Unit 4: Lichen	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests.		The objective of this course is to expose the students to different forms of plant life
2	III	Economic Botany	HONS	C 6	Unit 7: Sources of oils and fats, General description, classification, extraction, their uses and health implications groundnut, coconut, linseed, soybean, mustard and coconut (Botanical	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	12 Hrs/Week	The objective of this course is to expose the students on various economically important plants and plant products



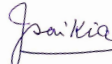
				<p>name, family &amp; uses).  Essential Oils: General account, extraction methods, comparison with fatty oils &amp; their uses.  Unit 8: Natural Rubber, Para-rubber: tapping, processing and uses.  Unit 9: Drug-yielding plants, Therapeutic and habit-forming drugs with special reference to <i>Cinchona</i>, <i>Rawolfia</i>, <i>Andrographis</i>, <i>Aloevera</i> and <i>Phyllanthus</i> (Morphology, processing, uses and health hazards).  Unit 10: Timber plants, General account with special reference to teak, sal, pine &amp; sisu.  Unit 11: Fibers  Classification based on the origin of fibers; Cotton, Coir and Jute (morphology, extraction and uses).  Unit 12: Aromatics and Petrocrops, General account with special reference to <i>Aquilaria</i>, <i>Cymbopogon</i>, <i>Vetiveria</i>, <i>Pogostemon</i>, <i>Jatropha</i> and <i>Ricinus</i>.</p>			
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		Genetics	HONS	C 7	<p>Unit 1: Mendelian genetics and its extension</p> <p>Unit 2: Extrachromosomal Inheritance</p> <p>Unit 3: Linkage, crossing over and chromosome mapping Sex Linked, sex-limited and sex-influence traits</p> <p>Unit 4: Variation in chromosome number and structure</p> <p>Unit 5: Fine structure of gene</p> <p>Unit 6: Gene mutations.</p> <p>Unit 7. Population and Evolutionary Genetics</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests.		
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		Plant Ecology and Taxonomy	GENERIC	GE 3	<p>Unit 6: Introduction to plant taxonomy</p> <p>Unit 7: Identification, Functions of Herbarium, important herbaria and botanical gardens of the world and India; Documentation: Flora, Keys: single access and multi-access</p> <p>Unit 8: Taxonomic evidences from palynology, cytology, phytochemistry and molecular data.</p> <p>Unit 9: Taxonomic hierarchy</p> <p>Unit 10 Botanical nomenclature</p> <p>Unit 11 Classification, Types of classification-artificial, natural and phylogenetic. Bentham and Hooker (upto series), Engler and Prantl (upto series).</p> <p>Unit 12 Biometrics, numerical taxonomy and cladistics , Characters; variations; OTUs, character weighting and coding; cluster analysis; phenograms, cladograms (definitions and differences).</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests.	3 Hrs/Week	The objective of this course is to expose the students to interaction of plant life with the surroundings and also to identification, classification and nomenclature of plants
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3	V	Genetics & Plant Breeding, Biostatistics	MAJOR	503	<p><b>Genetics</b></p> <p>Unit – 1: Mendel’s Laws, their critical appreciation, gene interactions and modified monohybrid and dihybrid ratios; concept of alleles, multiple alleles and multiple genes, Linkage, Crossing Over and basic knowledge of Gene Mapping.</p> <p>Unit – 2: Determination of Sex, Sex Linked and Sex Limited Traits, Cytoplasmic Inheritance with reference to Plastid Inheritance and Kappa Particle Inheritance.</p> <p>Unit – 3: Chromosomal (numerical and structural) and Gene Mutation, concept of Biochemical Mutation.</p> <p>Unit – 4: Basic ideas of Gene and its fine structure, Genetic Engineering and Gene Cloning, Concept Trans Gene.</p> <p>Unit – 5: Human Genetics: Karyotype, important Syndromes and disorders</p>	Lecture Method, Audio-Visual Aids, Student Seminars, Class tests and Practical based classes	12 Hrs/Week	To introduce the students with the basic knowledge on plant genetics and application of genetic for improvement of crop, application of statistics in biology.
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				<p><b>Plant Breeding</b>  Unit – 1: Methods of reproduction: Sexual, Vegetative, apomixes; Principles and methods of Plant Breeding: Introduction, Selection, Hybridization, Heterosis Breeding and concept of Mutation Breeding.  Unit – 2: In vitro Culture: Requirements, techniques and application in Crop Improvement.</p>			
				<p><b>Biostatistics</b>  Unit –1: Application of statistics in Biological Science, collection and classification of data for frequency distribution.  Unit –2: Measurement of Central Tendency; Mean, Media , Mode, Standard Error and Standard Deviation.  Unit –3: Test of Significance, Probability Test.</p>			

  
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### Teaching Plan

Name of the Teacher: Mrs. Joya Saikia Goswami; Designation: Associate Professor; Session: JAN - JUNE 2021

Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Teaching Methodology	Work Load	Learning Outcome
1	II	Mycology and Phytopathology	HONS	C 3	Unit 1: Introduction to fungi Unit 2: Chytridiomycota, Zygomycota, Characteristic features; Ecology and significance; Thallusorganisation; Reproduction; Life cycle with reference to <i>Synchytrium</i> , <i>Rhizopus</i> . Ecology; Life cycle, Heterokaryosis and parasexuality; Life cycle and classification with reference to <i>Saccharomyces</i> , <i>Aspergillus</i> , <i>Penicillium</i> , <i>Alternaria</i> , <i>Neurospora</i> and <i>Peziza</i> .	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	8 Hrs/Week	The objective of this course is to expose the students on the fungal world, different fungal diseases; their economic importance, etc.
		Archegoniate	HONS	C 4	Unit 5: Gymnosperms General characteristics, classification (up to family), morphology, anatomy and reproduction of <i>Cycas</i> , <i>Pinus</i> , <i>Ginkgo</i> and <i>Gnetum</i> (Developmental details not to be included); Ecological and economic importance. Unit 6: Fossil plants Process of fossilization; Early land plants ( <i>Psilophyton</i> and	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips		The objective of this course is to expose the students on Bryophyte, Gymnosperms and Fossil Plants

					<i>Rhynia),Cycadeoidea, Sphenophyllum</i>			
		Plant Ecology and Taxonomy	GENERIC	GE 2	Unit 1: Introduction Unit 2: Ecological factors Unit 3: Plant communities	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests.		The objective of this course is to expose the students to interaction of plant life with the surroundings and also to identification, classification and nomenclature of plants
2	IV	Plant Ecology and Phytogeography	HONS	C 9	Unit 1:Introduction, Basic concepts; Levels of organization. Inter-relationships between the living world and the environment, the components and dynamism, homeostasis. Unit 2: Soil Unit 3: Biotic interactions: Trophic organization, basic source of energy, autotrophy, heterotrophy; symbiosis, commensalism, parasitism. Unit 4: Population Ecology	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	12 Hrs/Week	The objective of this course is to expose the students to interaction of plant with its surroundings and also the geographic distribution of different plants
		Plant Physiology and Metabolism	GE	GE 4	Unit 1: Plant-water relations Unit 2: Mineral nutrition Unit 3: Translocation in phloem. Unit 4: Photosynthesis of carbon fixation; Photorespiration. Unit 5: Respiration	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests		To introduce the students with the basic knowledge on major physiological aspects of plants and to expose the students to various metabolic processes involved with plant life.
3	VI	Plant Physiology	MAJOR	601	Unit –1: Plant water	Lecture Method,	12	To introduce the

					relationships	Audio-Visual Aids, Practical based classes, Student Seminars and Class tests	Hrs/Week	students with the basic knowledge on major physiological aspects of plants
					Unit –2: Ascent of sap			
					Unit –3: Nitrogen Metabolism			
					Unit –4: Photosynthesis			
					Unit –5:Respiration			
					Unit – 6: Growth and Development			

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Teaching Plan

Name of the Teacher: Dimbeshwar Das; Designation: Assistant Professor; Session: JAN – JUNE 2021

Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Teaching Methodology	Work Load	Learning Outcome
1	II	Mycology and Phytopathology	HONS	C 3	Unit 6: Phytopathology	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	8 Hrs/week	The objective of this course is to expose the students on the fungal world, different fungal diseases; their economic importance, etc.
		Archegoniate	HONS	C 4	Unit 1: Introduction, Unifying features of archegoniate; Transition to land habit; Alternation of generations. Unit 2: Bryophytes, General characteristics; Adaptations to land habit; Classification; Range of thallus organization. Unit 3: Type Studies- Bryophytes Unit 6: Fossil plants, Process of fossilization; Early land plants ( <i>Psilophyton and Rhynia</i> ), <i>Cycadeoidea, Sphenophyllum</i>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips		The objective of this course is to expose the students on Bryophyte, Gymnosperms and Fossil Plants
		Plant Ecology and Taxonomy	GE	GE 2	Unit 6: Introduction to plant taxonomy Unit 7: Identification, Functions of Herbarium, important herbaria and botanical gardens of the world and India; Documentation: Flora, Keys: single access and multi-access Unit 8: Taxonomic evidences from palynology, cytology, phytochemistry and molecular data.	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests.		The objective of this course is to expose the students to interaction of plant life with the surroundings and also to identification, classification and nomenclature of plants

					<p>Unit 9: Taxonomic hierarchy, Ranks, categories and taxonomic groups</p> <p>Unit 10 Botanical nomenclature</p> <p>Unit 11 Classification, Types of classification-artificial, natural and phylogenetic. Bentham and Hooker (upto series), Engler and Prantl (upto series).</p> <p>Unit 12 Biometrics, numerical taxonomy and cladistics, Characters; variations; OTUs, character weighting and coding; cluster analysis; phenograms, cladograms (definitions and differences).</p>			
2	IV	Molecular Biology	HONS	C 8	<p>Unit 1: Nucleic Acids: Carriers of genetic information</p> <p>Unit 2: The structure of DNA and RNA</p> <p>Unit 3: The replication of DNA</p> <p>Unit 4: Central dogma and genetic code</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	12 Hrs/Week	To impart knowledge of the principles of heredity and different mechanisms of inheritance
		Plant Systematics	HONS	C 10	<p>Unit 1: Significance of Plant systematics</p> <p>Unit 2: Taxonomic hierarchy</p> <p>Unit 3: Morphology and Botanical nomenclature</p> <p>Unit 4: Systems of classification</p> <p>Unit 5: Biometrics, numerical taxonomy and cladistics</p> <p>Unit 6: Phylogeny of Angiosperms</p> <p>Unit 7: Major families of Angiosperms</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips		To expose the students to identification, classification and nomenclature of higher plants

		Vermicompost Technology	HONS	SEC 1.2	<p>Unit 1: Small scale Vermicomposting</p> <p>Unit 2: Nutritional composition of vermicompost</p> <p>Unit 3: Identification of Earthworms, Preparation, packaging of vermicompost</p>	Lecture Method, Audio-Visual Aids, Practical based classes and Filed Trips	3 Hrs/Week	To impart knowledge of the vermicompost and the Economic importance of vermiculture. The students will be able to produce good quality of Vermicompost and Vermiculture. Acquire skills for entrepreneurship
3	VI	Molecular Biology and Immunology	MAJOR	603	<p><b>Molecular Biology</b></p> <p>Unit 1: Nucleic Acids</p>	Lecture Method, Audio-Visual Aids, Student Seminars, Class tests and Practical based classes	12 Hrs/Week	To introduce the students with the fundamentals of molecular biology and immunology
					<p>Unit-2: Replication of DNA</p> <p>Unit-3: Features of genetic code</p> <p>Unit-4: Recombination in Prokaryotes</p> <p>Unit-3: Features of geneticcode</p> <p><b>Immunology</b></p> <p>Unit -1: Plant health management</p> <p>Unit -2: Immunity &amp; resistant in mammals, principle of antigens and Antibodies reaction</p> <p>Unit-3: Interaction of plants with bacteria, virus and fungi</p>			
		Biophysics and Bioinformatics	MAJOR	604	<p><b>Biophysics</b></p> <p>Unit -1: Scope and development of Biophysics</p>	Lecture Method, Audio-Visual Aids, Student Seminars, Class tests and Practical based classes		To expose the students to different statistical tools for Biological data analysis
					<p>Unit -2: Laws of Thermodynamics</p> <p>Unit-3: X-ray Crystallography (XRD), Chromatography, LASER and its biological applications, Flurences and its application, Basic concept of NMR and Ultra Sound</p> <p>Unit -3:Isotopes</p>			

					<b>Bioinformatics</b> Unit-1: Fundamentals of bioinformatics Unit-2: Biological database Unit-3. Database search and sequence alignment Unit-4: Phylogenetic analysis	Lecture Method, Audio-Visual Aids, ICT Tools, Bioinformatics Software, Student Seminars, Class tests and Practical based classes		
		Agrotechnology and Sustainable Utilization of Plants	MAJOR	606	Unit – 3: Agrotechnology of Chilli, turmeric, zinger, cardamom, black piper, jute, cotton, ramie, bamboo, teak, sal, sisoo, ajar, nahar and their economic utilization. Unit – 4: Medicinal importance of sarpagandha, ashwagandha, kalmegh, satmul, bos, giloi ( <i>Tinospora</i> ), bhotjalakia, amlakhi, arjun, silikha and their economic utilization Unit – 6: Domestication of Plants; Germplasm Collection & Conservation, Importance of Germplasm of Wild Species: Gene Library, Gene Bank; Concept of , Biofertilizers, biopesticides and Organic farming; Useful aspect of Lower Group of Plants: Algae, Fungi, Lichen.	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	12 Hrs/Week	To provide students comprehensive knowledge of usefulness of plant resources for human welfare



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### Teaching Plan

Name of the Teacher: Mrs. Sangeeta Chetia; Designation: Assistant Professor; Session: JAN – JUNE 2021

Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Teaching Methodology	Work Load	Learning Outcome
1	II	Mycology and Phytopathology	HONS	C 3	<p>Unit 2: Basidiomycota, General characteristics; Ecology; Life cycle and Classification with reference to black stem rust on wheat Puccinia (Physiological Specialization), loose and covered smut (symptoms only), Agaricus; Bioluminescence, Fairy Rings and Mushroom Cultivation.</p> <p>Unit 3: Allied Fungi and Oomycota General characteristics; Status of Slime molds, Classification; Occurrence; Types of plasmodia; Types of fruiting bodies. General characteristics; Ecology; Life cycle and classification with reference to <i>Phytophthora</i>, <i>Albugo</i>.</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	3 Hrs/Week	The objective of this course is to expose the students on the fungal world, different fungal diseases; their economic importance, etc.
		Archegoniate	HONS	C 4	<p>Unit 4: Type Studies- Pteridophytes Classification (up to family), morphology, anatomy and reproduction of <i>Psilotum</i>, <i>Selaginella</i>, <i>Equisetum</i> and <i>Ophioglossium</i>, <i>Marselia</i>. Apogamy and apospory, heterospory and seed habit, telome theory, stelar evolution; Ecological and economic importance.</p>	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	2 Hrs/Week	The objective of this course is to expose the students on Bryophyte, Gymnosperms and Fossil Plants

		Plant Ecology and Taxonomy	GENERIC	GE 2	Unit 4: Ecosystem Unit 5: Phytogeography	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests.	2 Hrs/Week	The objective of this course is to expose the students to interaction of plant life with the surroundings and also to identification, classification and nomenclature of plants
2	IV	Plant Ecology and Phytogeography	HONS	C 9	Unit 5: Plant Communities Unit 6: Ecosystem: Structure and Function Unit 7: Phytogeography	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	6 Hrs/Week	The objective of this course is to expose the students to interaction of plant with its surroundings and also the geographic distribution of different plants
		Plant Physiology and Metabolism	GENERIC	GE 4	Unit 6: Enzymes Unit 7: Nitrogen metabolism Unit 8: Plant growth regulators Unit 9: Plant response to light and temperature	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests		To introduce the students with the basic knowledge on major physiological aspects of plants and to expose the students to various metabolic processes involved with plant life.
3	VI	Agrotechnology and Sustainable Utilization of Plants	MAJOR	606	Unit -1: Origin of cultivated plants, ethnobotany and its importance in Indian context, Knowledge on Indigenous Knowledge System (IKS)	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	4 Hrs/Week	To provide students comprehensive knowledge of usefulness of plant resources for human

					Unit – 2: Agrotechnology of rice, wheat, mustard, sunflower, sesume, groundnut, soyabean, gram, mung, pea, tea, coffee, potato, cabbage, cauliflower, tomato and their economic utilization			welfare
					Unit – 5: Aromatic and Petrocrops (Cultivation and economic utilization) of patchouli, citronella, vitivar, sasi, jatropa, era.			

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