



গড়গাঁও মহাবিদ্যালয়  
GARGAON COLLEGE

**TEACHING PLAN  
DEPARTMENT OF BOTANY  
GARGAON COLLEGE  
JULY 2023-JUNE 2024**



Teaching Plan (Session: 2023-24)  
(Odd Semester, Aug-Dec, 2023)

Name of the Teacher: Dr. Dimbeshwar Das

Teaching Plan

Name of the Teacher: Dr. Dimbeshwar Das; Designation: Assistant Professor; Session: Aug - Dec 2023



Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Duration	Number of students	Teaching Methodology	Work Load	Learning Outcome
1	I (FYUGP)	Algae, Fungi, Bryophytes & Pteridophytes	MAJOR	BOT C1	Unit 1: Introduction to Algae Unit 3: Bryophytes	AUG - DEC 23	41	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	3 Hrs/Week	To provide knowledge to the students on various forms of algae, fungi, bryophytes and pteridophytes - their characteristics, mode of reproduction and economic importance.  1. To introduce the learners to the concept of health and wellness and its relevance in daily life. 2. To introduce the learners to the relation between mind-body and its relevance. 3. To introduce learners to health behavior and promotion of human strengths for well-being.  To provide knowledge to the students on Mushroomcultivation, production and processing techniques.
		Algae, Fungi, Bryophytes & Pteridophytes	MINOR	MINBOT1	Unit 1: Introduction to Algae Unit 3: Bryophytes	AUG - DEC 23	53		4 Hrs/Week	
		Health and Wellness	MAJOR	VAC2	Unit 1: Introduction to Health & Wellness Unit 2: Mind - Body and Well-Being	AUG - DEC 23	150	Lecture Method, Audio-Visual Aids, Group Discussion, Debate and Class tests	2 Hr/Week	
		SEC: Mushroom Culture Technology	MAJOR	SEC119	Unit 1: Introduction to Cultivation Technology Unit 2: Storage Unit 3: Practical	AUG - DEC 23	26	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	1 Hr/Week	
		GEC: Natural Resource Management	MAJOR	GECBOT1	Unit 1: Natural resources Unit 4: Contemporary practices in resource management	AUG - DEC 23	10	Lecture Method, Audio-Visual Aids, Debate and Class tests	1 Hr/Week	

*Dr. Dimbeshwar Das*  
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Gargaon College, Simaluguri  
Dist. Sivasagar, Pin 785668 Assam

2	III	Genetics	HONS.	C 7	Unit 1: Mendelism Genetics and its Extension Unit 2: Extrachromosomal Inheritance Unit 3: Linkage, Crossing Over and chromosome mapping Unit 4: Variation in chromosome number and structure	AUG - DEC 23	25	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	10 Hrs/Week	To impart knowledge of the principles of heredity and different mechanisms of inheritance
		Basics of Vermicomposting	HONS.	SEC 1.1	Unit 1: Introduction to vermiculture Unit 2: The species of earthworms Unit 3: Biology of earthworms	AUG - DEC 23	20	Lecture Method, Audio-Visual Aids, Practical based classes and Filed Trips	1 Hr/Week	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	Analytical Techniques in Plant Sciences	HONS.	DSE 1	Unit 1: Imaging and related techniques Unit 2: Cell fractionation Unit 3: Radioisotopes Unit 4: Spectrophotometry Unit 5: Chromatography Unit 6: Characterization of proteins and nucleic acids Unit 7: Biostatistics	AUG - DEC 23	25	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	13 Hrs/Week	To expose the students to different techniques which can be used to study different Biological processes



*Dr. Dimbeshwar Das*  
Head  
Department of Botany  
Gargaon College, Simaluguri  
Dist. Sivasagar, Pin 785668 Assam





Name of the Teacher: Sangeeta Chetia

Teaching Plan

Name of the Teacher: Mrs. Sangeeta Chetia; Designation: Assistant Professor; Session: Aug - Dec 2023



Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Duration	Number of students	Teaching Methodology	Work Load	Learning Outcome
1	I (FYUGP)	Algae, Fungi, Bryophytes & Pteridophytes	MAJOR	BOT C1	Unit 2: Introduction to fungi, Lichen, Study of major divisions of fungi, Economic importance of fungi	AUG - DEC 23	41	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	3 Hrs/Week	To provide knowledge to the students on various forms of algae, fungi, bryophytes and pteridophytes - their characteristics, mode of reproduction and economic importance.
		Algae, Fungi, Bryophytes & Pteridophytes	MINOR	MINBOT1	Unit 2: Introduction to fungi, Lichen, Study of major divisions of fungi, Economic importance of fungi	AUG - DEC 23	53		2 Hrs/Week	
		GEC: Natural Resource Management	MAJOR	GECBOT1	Unit 2: Sustainable utilization of land and water resources	AUG - DEC 23	10		4 Hrs/Week	
2	III	Anatomy of Angiosperms	HONS.	C 5	Unit 1: Introduction and scope of Plant Anatomy Unit 2: Structure and development of plant body Unit 3: Tissues	AUG - DEC 23	34	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	9 Hrs/Week	To expose the students on the structural and anatomical organisations of plant tissues and their development
		Economic Botany	HONS.	C 6	Unit 1: Origin of cultivated Plants Unit 2: Cereals Unit 3: Legumes Unit 4: Sources of sugar and starches Unit 5: Spices Unit 6: Beverages Unit 7: Sources of oils and fats	AUG - DEC 23	34			

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Gargaon College, Simaluguri  
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		Plant Anatomy and Embryology	GE	GE 3	Unit 8: Natural rubber Unit 9: Drug yielding plants Unit 10: Timber plants Unit 11: Fibres Unit 12: Aromatic and Petrocrops	AUG - DEC 23	10	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	5 Hrs/Week	To expose the students to the types of plant tissues their arrangement and also to plant reproduction
					Unit 3: Secondary Growth Unit 4: Adaptive and protective systems Unit 7: Embryo and endosperm Unit 8: Apomixis and polyembryony					
3	V	Plant Physiology	HONS.	C 12	Unit 1: Plant water relations Unit 2: Mineral nutrition Unit 3: Nutrient uptake Unit 4: Translocation in the phloem	AUG - DEC 23	25	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	9 Hrs/Week	To expose the students to different physiological processes in plant life
					Unit 5: Plant Growth regulators Unit 6: Physiology of flowering Unit 7: Phytochromes, Cryptochromes and phototropins					

Head  
Department of Botany  
Gargaon College, Simaluguri  
Dist. Sivasagar, Pin 785666 Assam



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08/12/23



Name of the Teacher: Sandeepa Agarwalla

Teaching Plan

Name of the Teacher: Miss Sandeepa Agarwalla; Designation: Assistant Professor; Session: Aug - Dec 2023



Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Duration	Number of students	Teaching Methodology	Work Load	Learning Outcome
1	I (FYUGP)	Algae, Fungi, Bryophytes & Pteridophytes	MAJOR	BOTCI	Unit 4: Pteridophytes, Ecological and economic importance	AUG - DEC 23	41	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	3 Hrs/Week	To provide knowledge to the students on various forms of algae, fungi, bryophytes and pteridophytes - their characteristics, mode of reproduction and economic importance.
		Algae, Fungi, Bryophytes & Pteridophytes	MINOR	MINBOTI	Unit 4: Pteridophytes, Ecological and economic importance	AUG - DEC 23	53		2 Hrs/Week	
		GEC: Natural Resource Management	MAJOR	GECBOTI	Unit 3: Forests: Definition, Significance, Types of vegetation in India	AUG - DEC 23	10	Lecture Method, Audio-Visual Aids, Debate and Class tests	2 Hrs/Week	To provide knowledge to the students on importance, sustainable utilization, conservation and management of natural resources
2	III	Anatomy of Angiosperms	HONS.	C 5	Unit 4: Apical Meristem Unit 5: Vascular cambium and Wood Unit 6: Adaptive and Protective system	AUG - DEC 23	34	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	9 Hrs/Week	To expose the students on the structural and anatomical organisations of plant tissues and their development
		Genetics	HONS.	C 7	Unit 5: Fine Structure of Gene Unit 6: Gene Mutations Unit 7: Population and Evolutionary Genetics	AUG - DEC 23	34			To impart knowledge of the principles of heredity and different mechanisms of inheritance
		Plant Anatomy and Embryology	GE	GE 3	Unit 1: Meristematic and permanent tissues Unit 2: Organs Unit 5: Structural organization of flowers Unit 6: Pollination and fertilization	AUG - DEC 23	34	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	4 Hrs/Week	To expose the students to the types of plant tissues their arrangement and also to plant reproduction

*Sandeepa*

Head  
Department of Botany  
Gargaon College, Simaluguri  
Dst. Sivasagar, Pin 785668, Assam

3	V	Reproductive Biology of Angiosperms	HONS.	C 11	Unit 1: Introduction Unit 2: Reproductive development Unit 3: Anther and Pollen Biology Unit 4: Ovule Unit 5: Pollination and fertilization Unit 6: Self incompatibility	AUG - DEC 23	25	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	11 Hrs/Week	To expose the students to the process and mechanisms of plant reproduction.
		Bioinformatics	HONS.	DSE 2	Unit 1: Introduction to Bioinformatics Unit 2: Databases in Bioinformatics Unit 3: Biological Sequence Databases Unit 4: Sequence Alignments Unit 5: Molecular Phylogeny Unit 6: Applications of Bioinformatics	AUG - DEC 23	25	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests		To expose the students to the application of computation tools in solving Biological problems

*Sandeepa*



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Department of Botany  
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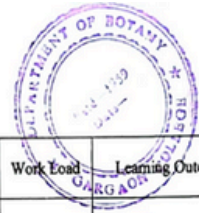


## Teaching Plan (Session: 2023-24) (Even Semester, Jan-May, 2024)

Name of the Teacher: Dr. Dimbeshwar Das

### Teaching Plan

Name of the Teacher: Dr. Dimbeshwar Das; Designation: Assistant Professor; Session: JAN - MAY 2024

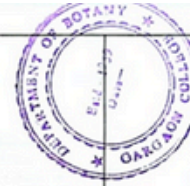


Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Duration	Number of students	Teaching Methodology	Work Load	Learning Outcome
1	II (FYUGP)	Morphology and Reproduction of Spermatophytes	MAJOR	BOTC2	Unit 1: Gymnosperm; Fossil plants:	JAN - MAY 2024	26	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	3 Hrs/Week	To provide knowledge to the students on Gymnosperms and Angiosperms with their morphology, mode of reproduction, patterns of embryo development and economic and ecological importance.
					Unit 2: Morphology of Angiosperms					
		Morphology and Reproduction of Spermatophytes	MINOR	MINBOTC2	Unit 1: Gymnosperm; Fossil plants:	JAN - MAY 2024	34	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests	2 Hrs/Week	To provide knowledge to the students on Gymnosperms and Angiosperms with their morphology, mode of reproduction, patterns of embryo development and economic and ecological importance.
					Unit 2: Morphology of Angiosperms					
		GEC; Plant Diversity and Human Welfare	MAJOR	GECBOT2	Unit 1: Plant diversity and its scope; Values and uses of Biodiversity	JAN - MAY 2024	8	Lecture Method, Audio-Visual Aids, Debate and Class tests	3 Hrs/Week	To provide knowledge to the students on biodiversity and its importance for human welfare.
					Unit 2: Loss of Biodiversity; Management of Plant Biodiversity	JAN - MAY 2024				
		SEC: Conservation and Cultivation of Orchids	MAJOR	SEC219	Unit 1: Introduction to Orchids.	JAN - MAY 2024	26	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	3 Hrs/Week	To provide knowledge to the students on Orchid diversity with special reference to NE India, Cultivation, Propagation and conservation techniques..
					Unit 2: Common and endemic					
					Unit 3: Propagation of Orchids					
					Unit 4: Conservation of Orchids and Practical					
VAC: Environmental Science	MAJOR	VAC 3	Unit 1: The Multidisciplinary nature of environmental studies	JAN - MAY 2024	150	Lecture Method, Audio-Visual Aids, Debate and Class tests	2 Hrs/Week	1. Able to critically examine all sides of environmental issues. 2. Able to recognize the physical, chemical, and		
			Unit 2: Natural Resources							
			Unit 3: Ecosystems							

  
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Dist. Sibsagar, PIN 786432, Assam.



					Unit 4: Biodiversity and its conservation Unit 5: Environmental Pollution Unit 6: Social Issues and the Environment Unit 7: Human Population and the Environment					biological components of the earth's systems and show how they function. 3. Able to do independent research on human interactions with the environment.
2	IV	Molecular Biology	HONS.	C 8	Unit 1: Nucleic Acids: Carriers of genetic information Unit 2: The structure of DNA and RNA Unit 3: The replication of DNA	JAN - MAY 2024	32	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips		To impart knowledge of the principles of heredity and different mechanisms of inheritance
		Plant Systematics	HONS.	C 10	Unit 1: Significance of Plant systematics Unit 2: Taxonomic hierarchy Unit 3: Morphology and Botanical nomenclature Unit 4: Systems of classification Unit 5: Biometrics, numerical taxonomy and cladistics Unit 6: Phylogeny of Angiosperms Unit 7: Major families of Angiosperms	JAN - MAY 2024	32	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	10 Hrs/Week	To expose the students to identification, classification and nomenclature of higher plants
		Vermicompost Technology (SEC)	HONS.	SEC 1.2	Unit 1: Small scale Vermicomposting Unit 2: Nutritional composition of vermicompost	JAN - MAY 2024	20	Lecture Method, Audio-Visual Aids, Practical based classes and Filed Trips	1 Hr/Week	To impart knowledge of the vermicompost and the Economic importance of vermiculture. The students will be able to



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Gargaon College, Simaluguri  
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					Unit 3: Identification of Earthworms, Preparation, packaging of vermicompost					produce good quality of Vermicompost and Vermiculture. Acquire skills for entrepreneurship
3	VI	Plant Biotechnology	HONS.	C 14	Unit 1: Plant Tissue Culture Unit 5: Applications of Biotechnology	JAN - MAY 2024	25	Lecture Method, Audio-Visual Aids, Practical based classes and Filed Trips		To expose the students to application of modern tools and techniques in Biology
		Plant Breeding	HONS.	DSE 3	Unit 1: Plant Breeding Unit 2: Methods of crop improvement Unit 3: Quantitative inheritance Unit 4: Inbreeding depression and heterosis Unit 5: Crop improvement and breeding	JAN - MAY 2024	25	Lecture Method, Audio-Visual Aids, Practical based classes and Filed Trips	10 Hrs/Week	To expose the students to different methods of plant improvement and breeding techniques.
		Biostatistics	HONS.	DSE 4	Unit 1: Biostatistics Unit 2: Collection of data primary and secondary Unit 3: Measures of central tendency Unit 4: Correlation Unit 5: Statistical inference	JAN - MAY 2024	25	Lecture Method, ICT Tools and Practical based classes		To expose the students to different statistical tools for Biological data analysis

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Head  
Department of Botany  
Gargaon College, Simaluguri  
Dist. Sivasagar, PIN 781053 Assam





Name of the Teacher: Sangeeta Chetia

Teaching Plan

Name of the Teacher: Mrs. Sangeeta Chetia ; Designation: Assistant Professor; Session: JAN - MAY 2024



Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Duration	Number of students	Teaching Methodology	Work Load	Learning Outcome
1	II (FYUGP)	Morphology and Reproduction of Spermatophytes	MAJOR	BOTC2	Unit 4: Pollination, fertilization and post fertilization developments	JAN - MAY 2024	26	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	2 Hrs/Week	To provide knowledge to the students on Gymnosperms and Angiosperms with their morphology, mode of reproduction, patterns of embryo development and economic and ecological importance.
		Morphology and Reproduction of Spermatophytes	MINOR	MINBOT2	Unit 4: Pollination, fertilization and post fertilization developments	JAN - MAY 2024	34	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests	2 Hrs/Week	
		GEC: Plant Diversity and Human Welfare	MAJOR	GECBOT2	Unit 3: Conservation of Biodiversity	JAN - MAY 2024	8	Lecture Method, Audio-Visual Aids, Debate and Class tests	2 Hrs/Week	
2	IV	Plant Ecology & Phytogeography	HONS.	C 9	Unit 1: Introduction	JAN - MAY 2024	32	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	7 Hrs/Week	To expose the students to interaction of plant with its surroundings and also the geographic distribution of different plants.
					Unit 2: Soil					
		Plant Ecology and Taxonomy	GE	GE 4	Unit 4: Population Ecology	JAN - MAY 2024	11	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests	4 Hrs/Week	To expose the students to interaction of plant life with the surroundings and also to identification, classification and nomenclature of plants
					Unit 1: Introduction					
					Unit 2: Ecological factors					
					Unit 3: Plant communities					
					Unit 9: Taxonomic hierarchy					
					Unit 10: Botanical Nomenclature					

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Gargaon College, Sivakolai  
Dist. Sivakolai

*Sangeeta Chetia*

3	VI	Plant Metabolism	HONS.	C 13	Unit 11: Classification	JAN - MAY 2024	26	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests	14 Hrs/Week	To expose the students to various metabolic processes involved with plant life
					Unit 1: Concept of metabolism					
					Unit 2: Carbon assimilation					
					Unit 3: Carbohydrate metabolism					
					Unit 4: Carbon Oxidation					

*Sangeeta Chetia*  
Head  
Department of Botany  
Gargaon College, Sivakolai  
Dist. Sivakolai



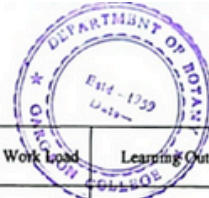




Name of the Teacher: Sandeepa Agarwalla

Teaching Plan

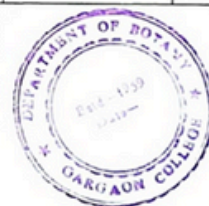
Name of the Teacher: Miss Sandeepa Agarwalla ; Designation: Assistant Professor Session: JAN - MAY 2024



Sl. No.	Semester	Subject	Stream	Paper Code	Unit	Duration	Number of students	Teaching Methodology	Work Load	Learning Outcome
1	II (FYUGP)	Morphology and Reproduction of Spermatophytes	MAJOR	BOTC2	Unit 3: Anther and pollen biology and Ovule	JAN - MAY 2024	26	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	2 Hrs/Week	To provide knowledge to the students on Gymnosperms and Angiosperms with their morphology, mode of reproduction, patterns of embryo development and economic and ecological importance.
		Morphology and Reproduction of Spermatophytes	MINOR	MINBOTC2	Unit 3: Anther and pollen biology and Ovule	JAN - MAY 2024	34	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests	2 Hrs/Week	
		GEC: Plant Diversity and Human Welfare	MAJOR	GECBOT2	Unit 4: Role of plants in relation to Human Welfare	JAN - MAY 2024	8	Lecture Method, Audio-Visual Aids, Debate and Class tests	4 Hrs/Week	To provide knowledge to the students on biodiversity and its importance for human welfare.
2	IV	Molecular Biology	HONS.	C 8	Unit 4: Central Dogma and Genetic Code	JAN - MAY 2024	32	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars, Class tests and Filed Trips	9 Hrs/Week	To impart knowledge of the principles of heredity and different mechanisms of inheritance
					Unit 5: Transcription					
					Unit 6: Processing and modification of RNA					
		Plant Ecology & Phytogeography	HONS.	C 9	Unit 3: Biotic Interaction	JAN - MAY 2024	32	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests	To expose the students to different physiological processes metabolic processes involved with plant life	
Plant Ecology and Taxonomy	GE	GE 4	Unit 5: Plant Communities	JAN - MAY 2024	11	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests				
Plant Ecology and Taxonomy	GE	GE 4	Unit 6: Ecosystem: Structure and Function	JAN - MAY 2024	11	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests	To expose the students to interaction of plant life			
Plant Ecology and Taxonomy	GE	GE 4	Unit 7: Phytogeography	JAN - MAY 2024	11	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests				

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Department of Botany  
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					Unit 6: Introduction to plant taxonomy Unit 7: Identification Unit 8: Taxonomic evidences from palynology, cytology, phytochemistry and molecular data Unit 12: Biometrics, Numerical taxonomy and cladistics			Practical based classes, Student Seminars and Class tests		with the surroundings and also to identification, classification and nomenclature of plants
3	VI	Plant Metabolism	HONS.	C 13	Unit 5: ATP-Synthesis Unit 6: Lipid metabolism Unit 7: Nitrogen metabolism	JAN - MAY 2024	26	Lecture Method, Audio-Visual Aids, Practical based classes, Student Seminars and Class tests	9 Hrs/Week	To expose the students to various metabolic processes involved with plant life
		Plant Biotechnology	HONS.	C 14	Unit 8: Mechanisms of signal transduction Unit 2: Recombinant DNA technology Unit 3: Gene Cloning Unit 4: Methods of gene transfer	JAN - MAY 2024	26	Lecture Method, Audio-Visual Aids, Practical based classes and Filed Trips		To expose the students to application of modern tools and techniques in Biology



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Department of Botany  
Gargaon College, Simaluguri  
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