Gour Mohan Sachin Mandal Mahavidyalaya

Department of Botany
Evaluative Report

GOUR MOHAN SACHIN MANDAL MAHAVIDYALAYA

BIRESWARPUR, 24 PARGANAS (S) WEST BENGAL- 743336

DEPARTMENT OF BOTANY

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INTRODUCTION

The term ‘botany’ is derived from an adjective ‘botanic’ that is again derived from the Greek word ‘botane’ which means hub. Botany is one of the world’s oldest natural sciences. Initially, Botany included all the plant-like organisms such as algae, lichens, ferns, fungi, mosses along with actual plants. Later on, it was observed that bacteria, algae and fungi belong to a different kingdom.

Botany, also called plant science or phytology, is the branch of natural science and biology studying plants, especially their anatomy, taxonomy, and ecology. As Botany deals with the study of different processes going on in plants, the course in Botany encourages students to keep abreast of as many developments as possible in Plant Sciences. Studies in Classical Botany deal with plant behaviour, morphology, physiology, embryology, ecology, genetics, systematic etc. and provide solutions to agricultural, horticultural and environmental problems, for crop improvement, organic farming and natural resource management. By the study of the fundamental details of plants, students can understand growth and development, reproduction, life cycle, medicinal values and economic importance of food resources.

ABOUT THE DEPARTMENT

Established: General: 2006, Hons: 2019
Courses: Semester wise 3 years degree course (under CBCS System) and 4 years degree courses (NEP 2020) under University of Calcutta.
Intake capacity: 13
Syllabus (NEP 2020) & Syllabus (UGC- CBCS)

HISTORY OF THE DEPARTMENT

Department of Botany came into existence in 2006 with the introduction of Bioscience course in Bachelor of Science (General) stream. In order to broaden the horizon of understanding about Plant Sciences, the college started B.Sc. (Honours) course in Botany in 2019.

As Botany deals with the study of different processes going on in plants, the course in Botany encourages students to keep abreast of as many developments as possible in Plant Sciences. Studies in Classical Botany deal with plant behaviour, morphology, physiology, embryology, ecology, genetics, systematic, etc. and provide solutions to agricultural, horticultural and environmental problems, for crop improvement, organic farming, and natural resource management. By the study of the fundamental details of plants, students can understand growth and development, reproduction, life cycle, medicinal values and economic importance of food resources. This course being an important component of Life Sciences offers immense opportunities in other related fields and applied disciplines such as Biochemistry, Biotechnology, Cell and Molecular Biology, Bioinformatics, Genomics, Agro-forestry, Environmental Science and Management and many others. Recent advances in Botany, which deal with the study of different processes going on in biological systems at the molecular level, have brought miraculous and revolutionary changes in the world of sciences. One of the most popular and much-needed areas of study is climatic changes. The knowledge of plant science can be used to solve environmental challenges. While studying Botany the students learn all these aspects of plants including its applications. Besides, the students will have greater opportunities open to them in higher studies and research along with better job prospects.

FACULTY PROFILE

The department has three State Aided College teachers (SACT) - Mr. Taraknath Halder, Mr. Subir Neogi and Mr. Indrajit Ghosh. Faculty members of the department of botany dedicate their service to achieve student success and development.

Details of our departmental faculty are as follows:

Name	Qualification	Designation	Specialization	Years of Experience	Email ID
1. Taraknath Halder	M.Sc., B.Ed.	SACT II	Cytogenetics & plant biotechnology	9 years 4 months	haldertaraknath@outlook.com
2. Indrajit Ghosh	M.Sc., B.Ed.	SACT II	Cytogenetics & plant biotechnology	6 years	Indrajitghosh54@gmail.com
3. Subir Neogi	M.Sc., M.Ed.	SACT II	Plant Taxonomy and Biosystematics	6 years	Subirneogi9@gmail.com

Mr. Taraknath Halder

He joined the botany department on 8th October, 2015 as a state aided college teacher. He passed B.Sc. (Honours) in Botany from Bankim Sardar College (University of Calcutta) in 2012 and M.Sc. from West Bengal State University in the year of 2014. He completed his B.Ed. in 2018 under WBUTTEPA.

Along with academic activities and other necessary duties in the college, he actively contributes in various examination related duties. He also assisted in Medicinal Plant Garden organized by department of Botany. He has participated in a State level Workshop on basic cell Biology Techniques held on 25th-26th November, 2022 organized by botany department.

AREA OF INTEREST: His Area of interest in Plant Biotechnology and cytogenetic.

Mr. Indrajit Ghosh

He joined the botany department on 11th January, 2019 as a state aided college teacher. He passed B.Sc. (Honours) in Botany from Katwa College (University of Burdwan) in 2012 and M.Sc. from West Bengal State University in the year of 2014. He qualified B.Ed. in 2018 under WBUTTEPA.

Along with academic activities and other necessary duties, he also assists in various examination related work. He also assisted in Medicinal Plant Garden organized by the department of botany. He qualified the 26th WBCSCSET examination.

AREA OF INTEREST: His area of interest lies in Plant Biotechnology and Cytogenetic.

Mr. Subir Neogi

He joined the botany department on 11th January, 2019 as a state aided college teacher. He passed B.Sc. (Honours) in Botany from Shyamsundar college (University of Burdwan) in 2013 and M.Sc. from West Bengal State University in the year of 2015. He completed his B.Ed. in 2018 under WBUTTEPA and M.Ed. in 2020 under Ramakrishna Mission Sikshanamandira.

Along with Academic activities and other necessary duties, he also assists in various examination related work. He also assisted in Medicinal Plant Garden organized by the department of Botany.

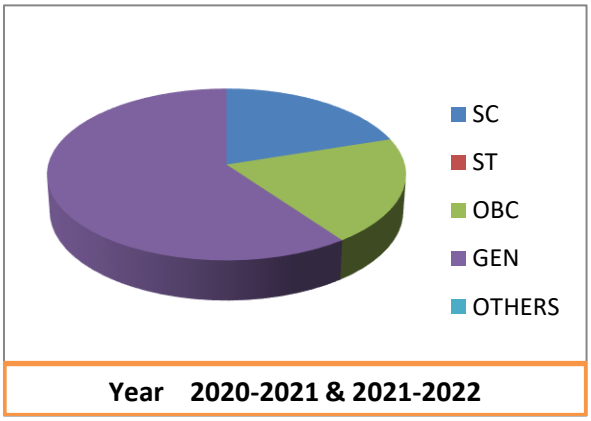
AREA OF INTEREST: His area of interest lies in Plant Taxonomy and Biosystematics.

STUDENTS' PROFILE

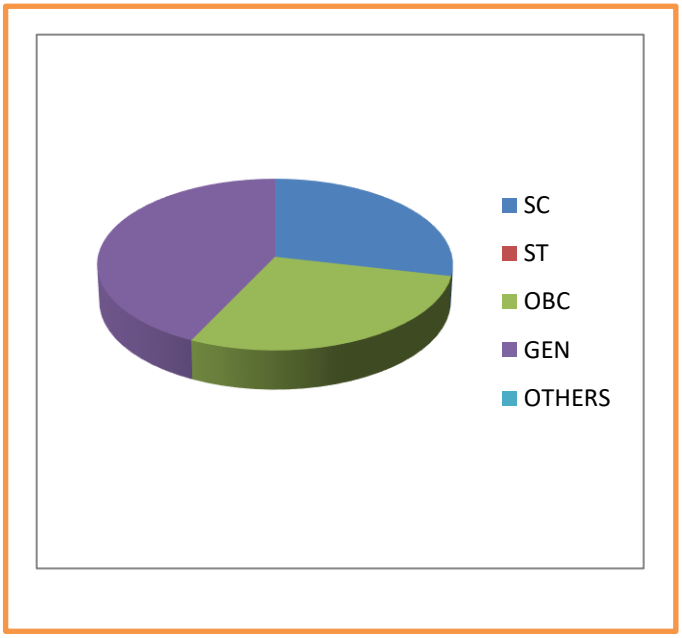
Name of the Course	Session	Admitted	Enrolled	
			Male	Female
UG B.Sc. Sem.-I (H)	2019-2020	03	03	00
UG B.Sc. Sem.-I (H)	2020-2021	08	03	05
UG B.Sc. Sem.-I (H)	2021-2022	09	05	04
UG B.Sc. Sem.-I (H)	2022-2023	07	04	03

PERCENTAGE OF SEATS FIELD AGAINST SEATS RESERVED FOR VARIOUS CATEGORIES

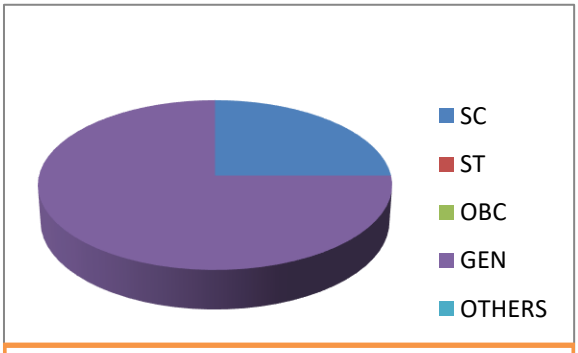
Programme name	Year	Number of allotted seats	SC	ST	OBC	GEN	Others	Total Admitted seats
B.Sc. Botany Honours	2019-2020	10	1	0	0	3	0	4
	2020-2021	10	2	0	2	6	0	10
	2021-2022	10	2	0	2	6	0	10
	2022-2023	10	2	0	2	3	0	7



Year 2020-2021 & 2021-2022



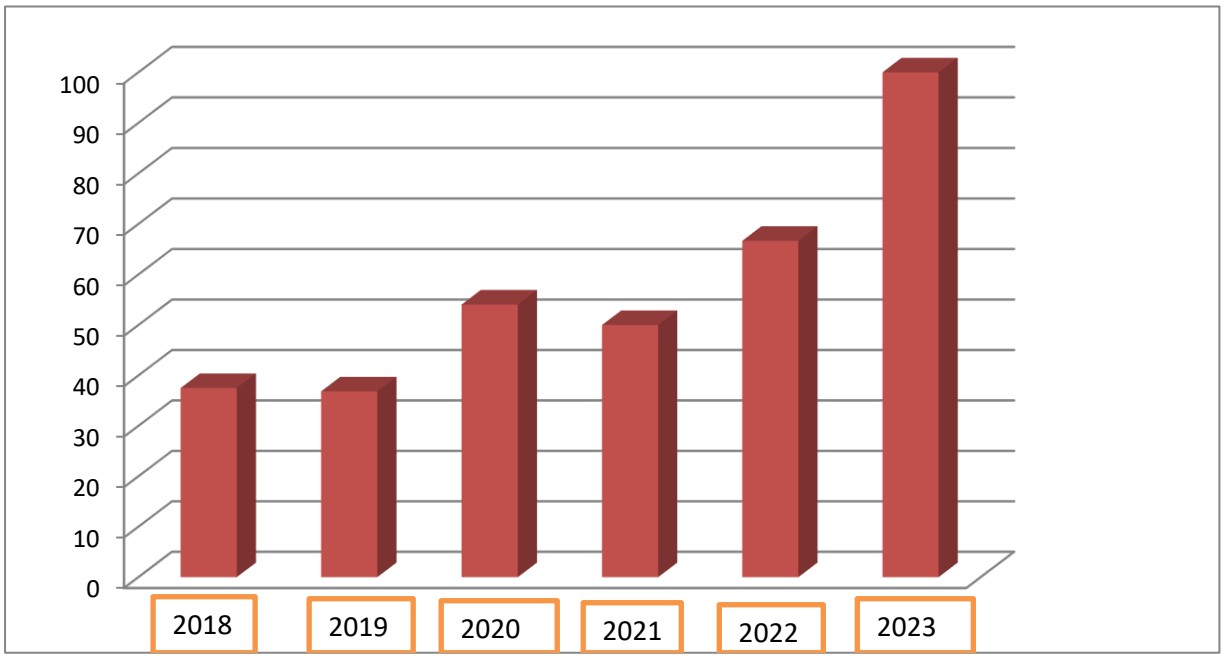
Year 2022-2023



Year 2019-2020

STUDENTS' RESULTS

Name of the Course	Session	Total students Female + Male	Pass student	Pass Percentage	Number of First Class
B.Sc. Part-III (G)	2018	09+15=**24**	09	37.50%	00
B.Sc. Part-III (G)	2019	06+13=**19**	07	36.84%	01
B.Sc. Part-III (G)	2020	13+24=**37**	20	54.05%	08
B.Sc. Part-III (G)	2021	15+24=**39**	39	100%	38
B.Sc. Sem.-VI (G)	2021	01+05=**06**	03	50%	02
B.Sc. Sem.-VI (G)	2022	08+10=**18**	12	66.66%	09
B.Sc. Sem.-VI (H)	2023	03+0=**03**	03	100%	03
B.Sc. Sem.-VI (G)	2023	02+08=**10**	10	100%	10



RESULT OF GENERAL COURSE OF EVERY YEAR

STUDENT PROGRESSION

Name	Session of Admission	Course and Institute where pursuing higher studies
Shrabani Gayen	2015	B.Ed.
Payel Naskar	2017	M.Sc. in Zoology
Jyoti Sankar Bhandari	2018	M.Sc. in Environmental Science
Katha Purkait	2018	BBA in Hospital Management
Shreya Purkait	2018	B.Ed.
Piu Ghosh	2019	D.El.Ed.
Apurba Saradar	2019	D.El.Ed.
Anannya Halder	2019	DOPT (Diploma in Optometry)
Anwesha Purkait	2019	D.El.Ed.

STUDENTS QUALIFIED FOR COMPETITIVE EXAMS

Name of Student	Session of Admission	Name of examination Qualified
Payel Naskar	2017	TET

PROGRAM SPECIFIC OUTCOMES

PSO1. Critical evaluation of ideas and arguments by collecting relevant information about the plants, so as to recognize their position in the classification systems and at phylogenetic level.

PSO2. Students will be able to access the primary literature, identify relevant works for a particular topic, and evaluate the scientific content of these works.

PSO3. Students will be able to compare and contrast the characteristics of the different groups of plants such as algae, fungi, bryophytes, pteridophytes, gymnosperms and angiosperms.

PSO4. Students will be able to use the evidence of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of life on earth.

PSO5. Students will be able to explain how Plants function at gene, genome, cellular and tissue level.

PSO6. Students will be will be able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.

PSO7. Students will be able to conceive the idea of artificial propagation of plants via vegetative methods and to find a livelihood via establishing miniature plant nurseries.

COURSE OUTCOMES

B.SC. BOTANY HONOURS

SEMESTER - I

CC-1(Phycology and Microbiology)

CO1- To study the evolutionary importance of Algae as progenitors of land plants.
CO2- Understand the unique and general features Algae and familiarize it.
CO3- To study the external morphology, internal structure and reproduction of different types of Algae.
CO4- Realize the application of Phycology in different fields.
CO 5- Understand the world of microbes.
CO 6 - Appreciate the adaptive strategies of the microbes.
CO 7- To study the economic importance of microorganisms.

CC-2 (Mycology and Phytopathology)

CO 1- Understand the world of fungi and lichens.
CO 2- Appreciate the adaptive strategies of the fungi and lichens.
CO 3- To study the economic and pathological importance of fungi and lichens.
CO4- Identify plant diseases and find out control measures.
CO5- Realize the significance of plant diseases as far as crop production is concerned.

SEMESTER – II

CC-3 (Plant anatomy)

CO1- Students will be able to draw diagrams and explain the major structures within the root, shoot, leaves, flowers, seeds, and seedlings of representative monocot and dicot angiosperm plants.
CO2- Understand the individual cells and also tissues simultaneously.
CO3- Understand the structural adaptations in plants growing in different environment.
CO4- Evaluate the stages of plant growth and development.
CO5- Translocation of assimilates into different plant parts.

CC- 4 (Archegoniate)

CO1- Understand the unique and general features of Bryophytes, Pteridophyte, Gymnosperm and familiarize it.
CO2- To study the external morphology, internal structure and reproduction of different types of Bryophytes, pteridophytes and Gymnosperm.
CO3- Understand the evolutionary trends in Pteridophytes and Gymnosperm.
CO4- To study alternation of generations in bryophytes.
CO5- To give General account of stellar evolution.

SEMESTER – III

CC-5 (Palaeobotany and Palynology)

CO1- Understand the significance of Paleobotany, palynology and its applications.
CO2- To give General account of Fossil and fossilization process.
CO3- Understand the Geological time scale with dominant plant groups through ages.
CO4- Realize the significance of Spore and Pollen in modern biology.

CC- 6 (Reproductive biology of Angiosperms)

CO1- Imparting an insight into the internal structure and reproduction of the most evolved group of plants, the Angiosperm.
CO2- To give General account of Microsporogenesis and Micro gametogenesis.
CO3- Understand the Embryogenesis and Development of Endosperm.
CO4- To study Apomixis and Polyembryony.
CO5- To realize and understand the external morphology, structure and types of Inflorescence, Flower, Fruits and seeds.
CO6- Understand the morphology and development of reproductive parts.
CO7- Get an insight in to the fruit and seed development**.**

CC- 7 (Plant systematic)

CO1- Students will learn the application of morphology in plant identification, classification and nomenclature.
CO2- Students learn Plant collection, preservation techniques and can identify plant in field.
CO3- Students get aware about various recent computerized tools used in plant research.
CO4- Students will know how the vegetation pattern changes in different ecosystem.
CO5- Students will learn the techniques of vegetation studies and its application.

SEC A (Applied Phycology, Mycology and Microbiology)

CO1- Students will learn the application of morphology in plant identification, classification and nomenclature phycology, mycology and microbiology**.**
CO2- Students will know Agar-agar, Algin, Carrageenan, Diatomite, Algal, and Toxin.
CO3- Understand the SCP, β-carotene, Biodiesel, bioplastics from algae.

CO4-Students will learn the techniques of Industrial production of Cheese, Ethanol, Enzyme, Amino acid, Vitamin, Antibiotic, Aflatoxin. Vinegar and Streptomycin, Polysaccharides.

Semester – IV

CC-8 (Plant geography, Ecology and Evolution)

CO1- Students learn Phytogeographical regions of India and Dominant flora of Eastern Himalaya, Western Himalaya and Sunderban.
CO2- Students will learn the endemism, habitat, niche, ecotone, edge–effect, Microclimate, ecads, ecotype, ecoclines, and carrying capacity, conservation and its importance.

CO3- Student will understand community ecology, and Ecological succession and discuss plants in the context of broader environmental concerns, such as climate change, habitat destruction, pollution, invasive species, and agriculture.
CO4- Students learn Phytoremediation, plant indicators and identify plant species important in local ecosystems.
CO5- Interpret and present ecological results and identify global environmental problems.
CO6- Understand the concept, Evidences of Evolution.

CC- 9 (Economic Botany)

CO1- Students learn Origin of cultivated crops and crop domestication and loss of genetic Diversity.
CO2- Students will learn the origin, morphology, processing and uses of Cereals, Legumes, Spices, Beverages, Sugar and starches, Oil and fats, Drug-yielding plants, Fibers.
CO3- Familiarize the student with plants of immense economic importance.
CO4- Participate in plant identification using observation skills.

CC- 10 (Genetics)

CO1- Students will understand the genetic terminology of genetics and laws of Mendelism.
CO2- Students will understand and solve the various example of interaction of genes and multiple alleles.
CO3- Students will able to construction of linkage map by test cross.
CO4- Student get idea and easily differentiate various types of inheritance and structural changes in chromosome.
CO5- Imparting an insight into the principles of heredity.
CO6- Understand the patterns of inheritance in different organisms.

SEC B – (Plant Breeding)

CO1- Understand the methods of crop improvement.

CO2- Students will understand the Molecular Breeding.

CO3- Understand the patterns of inheritance in Heterosis and hybrid seed production.

CO4- Students will understand the Role of mutations, polyploidy, distant hybridization and role of biotechnology in crop improvements.

CO5- Understand various plant breeding techniques.

CO6- Realize the role of plant breeding in increasing crop productivity.

SEMESTER – V

CC-11 (Cell and Molecular biology)

CO1- Define terminologies related to cell and molecular biology.
CO2- Identify localization and describe all cell organelles.
CO3- Discuss the dynamics of plant cell structure and function.
CO4- Describe Nucleus and chromosomes.
CO5- Describe DNA replication, Transcription and Translation.
CO6- Explain the concepts as well as mechanisms of damage and repair.
CO7- Explain gene action and regulation (concept of operon, its structure and regulation).
CO8- Interpret the genomic organization and its role in gene expression.

CC-12 (Biochemistry)

CO1- Understand the role, structure and importance of the bio molecules associated with plant life.
CO2- To study basics of enzymology.
CO3-Discovery, nomenclature and characteristics of enzymes.
CO4- To study concept of holoenzyme, apoenzyme, coenzyme and co-factors.
CO5- Regulation of enzyme activity and mechanism of action.
CO6- To study tools and techniques of recombinant DNA technology.
CO7- Students will understand the Carbohydrates, Proteins, Lipids and Nucleic Acids.

DSE-A (Industrial and Environmental Biology)

CO1-Understand the Bioreactors/ Fermenters and fermentation process.
CO2-Realize the role of Microbes in agriculture and remediation of contaminated soils.
CO3- Student will understand the Microbial flora of water.

DSE-B (Plant Biotechnology)

CO1- Define the terminologies related to plant biotechnology.
CO2- Describe the fermentation process.
CO3- Explain enzyme technology and their industrial scale production.
CO4- Interpret the production of Single cell proteins.
CO5- Illustrate the concept of phytoremediation.
CO6- Describe General method of gene isolation from the plants and their application.
CO7- Explain Methods of gene, transfer in plants.

SEMESTER – VI

CC-13 (Plant Physiology)

CO1- Define the terminologies: Plant water relations, Growth, Transpiration, Ascent of Sap, Plant growth regulators and Nitrogen metabolism.
CO2- Explain processes of mineral nutrition, absorption of water, ascent of sap, mechanisms of water loss from plants.
CO3- Demonstrate processes imbibition, Osmosis, Diffusion and Plasmolysis, measure growth by arc auxanometer, Bose Cresco graph.
CO4- Describe Plant growth regulators and their types and Discuss nitrogen metabolism in plants.
CO5- Explain mechanisms and application of photoperiodism, vernalisation and classify the plants based on Photoperiodism.

CC-14(Plant Metabolism)

CO1- Comprehend the importance of water in plant life and mechanisms for transport oi water and solutes in plants.
CO2- Evaluate the role of minerals in plant nutrition and their deficiency symptoms.
CO3- Interpret the role of enzymes in plant metabolism.
CO4- Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.
CO5- Analyse the biochemical reactions in relation to Nitrogen and lipid metabolisms.

DSE-A (Medicinal and Ethnobotany)

CO1- To realize and understand the History, scope and importance of medicinal plant.

CO2- Students will learn about the Ayurveda, siddha, unani and Polyherbal formulations.

CO3- Understand the Classification of drugs and Drug evaluation.

CO4- Students get aware about Secondary metabolites and their uses and nature.

CO5- Students will know Ethnobotany and folk medicine.

DSE-B (Natural resource management)

CO1- To realize and understand the Renewable and non-renewable sources of energy.

CO2- Students will learn the Biological Resources.

CO3- Students learn about Land, Water, Forests.

CO4- Students get aware about Biological Resources, Natural resources.

CO5- Students will know resource management, and conservation.

COURSE OUTCOMES

B.SC. BOTANY GENERAL

SEMESTER – I

CC1- Plant diversity I

(Phycology, Mycology, Phytopathology, Bryophytes and Anatomy)

CO1- To study the evolutionary importance of Algae as progenitors of land plants.
CO2- Understand the unique and general features Algae and familiarize it.
CO3- To study the external morphology, internal structure and reproduction of different types of Algae.
CO4- Realize the application of Phycology in different fields.
CO5- Understand the world of fungi and lichens.
CO6- Appreciate the adaptive strategies of the fungi and lichens.
CO7- To study the economic and pathological importance of fungi and lichens.
CO8- Identify plant diseases and find out control measures.
CO9- Realize the significance of plant diseases as far as crop production is concerned.

SEMESTER – II

CC2- Plant diversity II

(Pteridophytes, Gymnosperms, Palaeobotany, Morphology and Taxonomy)

CO1- Understand the unique and general features of Pteridophyte, Gymnosperm and familiarize it.
CO2- To study the external morphology, internal structure and reproduction of different types of pteridophytes and Gymnosperm.
CO3- Understand the evolutionary trends in Pteridophytes and Gymnosperm.
CO4- To study alternation of generations in bryophytes.
CO5- Understand the Embryogenesis and Development of Endosperm.
CO6- To study Apomixis and Polyembryony.
CO7- To realize and understand the external morphology, structure and types of Inflorescence, Flower, Fruits and seeds.
CO8- Understand the morphology and development of reproductive parts.
CO9- Get an insight in to the fruit and seed development**.**

SEMESTER – III

CC3- (Cell biology, Genetics and Microbiology)

CO1- Define terminologies related to cell and molecular biology.
CO2- Identify localization and describe all cell organelles.
CO3- Discuss the dynamics of plant cell structure and function.
CO4- Describe Nucleus and chromosomes.
CO5- Describe DNA replication, Transcription and Translation.
CO6- Students will understand the genetic terminology of genetics and laws of mendelism.
CO7- Students will understand and solve the various example of interaction of genes and multiple alleles.
CO8- Students will able to construction of linkage map by test cross.
CO9- Student get idea and easily differentiate various types of inheritance and structural changes in chromosome.

SEMESTER – IV

CC4- (Plant physiology and metabolism)

CO1- Define the terminologies: Plant water relations, Growth, Transpiration, Ascent of Sap, Plant growth regulators and Nitrogen metabolism.
CO2- Explain processes of mineral nutrition, absorption of water, ascent of sap, mechanisms of water loss from plants.
CO3- Demonstrate processes imbibition, Osmosis, Diffusion and Plasmolysis, measure growth by arc auxanometer, Bose Cresco graph.
CO4- Describe Plant growth regulators and their types and Discuss nitrogen metabolism in plants.
CO5- Explain mechanisms and application of photoperiodism, vernalisation and classify the plants based on Photoperiodism.
CO6- Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.
CO7- Evaluate the role of minerals in plant nutrition and their deficiency symptoms.
CO8- Interpret the role of enzymes in plant metabolism.
CO9- Analyse the biochemical reactions in relation to Nitrogen and lipid metabolisms.

SEMESTER – V

DSE-A1 (Phytochemistry and medicinal botany)

CO1- To realize and understand the History, scope and importance of medicinal plant.
CO2- Students will learn about the Ayurveda, siddha, unani and Polyherbal formulations.
CO3- Understand the Classification of drugs and Drug evaluation.
CO4- Students get aware about Secondary metabolites and their uses and nature.
CO5- Students will know Ethnobotany and folk medicine.

SEC-A1 (Plant breeding and biometry)

CO1- Understand the methods of crop improvement.
CO2- Students will understand the Molecular Breeding.
CO3- Understand the patterns of inheritance in Heterosis and hybrid seed production.
CO4- Understand various plant breeding techniques.
CO5- Realize the role of plant breeding in increasing crop productivity.
CO6- Student will understand Mean, Median & mode.
CO7- Students will understand the Role of mutations, polyploidy, distant hybridization and role of biotechnology in crop improvements.

SEMESTER – VI

DSE-B1 (Economic botany)

CO1- Students learn Origin of cultivated crops and crop domestication and loss of genetic Diversity.
CO2- Students will learn the origin, morphology, processing and uses of Cereals, Legumes, Spices, Beverages, Sugar and starches, Oil and fats, Drug-yielding plants, Fibers.
CO3- Familiarize the student with plants of immense economic importance.
CO4- Participate in plant identification using observation skills.

SEC-B1 (Plant biotechnology)

CO1- Define the terminologies related to plant biotechnology.
CO2- Describe the fermentation process.
CO3- Explain enzyme technology and their industrial scale production.
CO4- Interpret the production of Single cell proteins.
CO5- Illustrate the concept of phytoremediation.
CO6- Describe General method of gene isolation from the plants and their application.
CO7- Explain Methods of gene, transfer in plants.

DEPARTMENTAL ACTIVITIES

MEDICINAL PLANT GARDEN

The Botany department takes great pride in maintaining a medicinal plant garden in the college. The main objectives of the garden are:

- To focus on the growing role of nature in healing and wellness.
- To provide a learner-centered education where the student will have an intimate interaction with the environment of healing.
- To offer a location for the campus community to learn more about the role of nature in healing and wellness

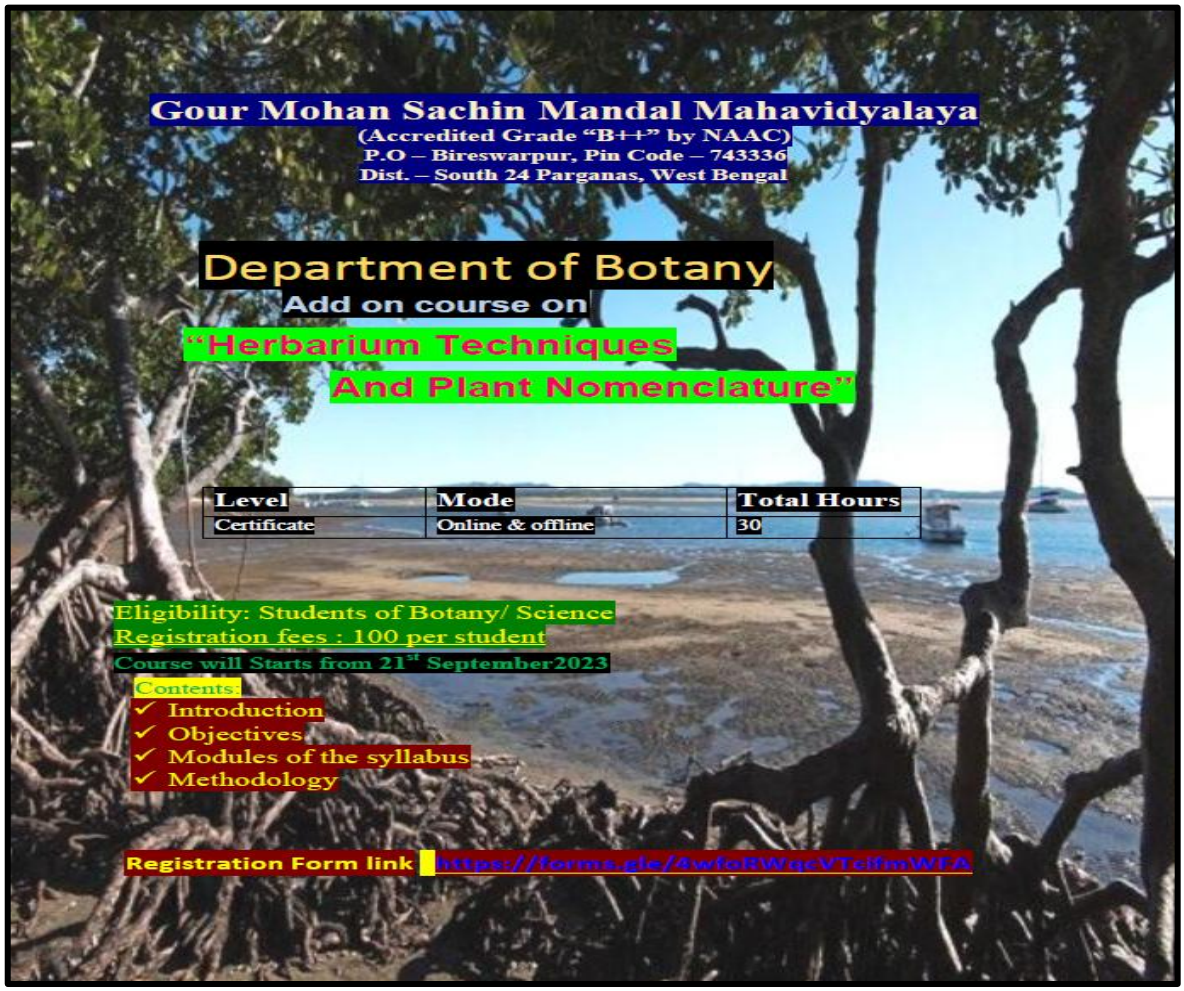
Importance: Cultivating medicinal plants is important for environmental conservation, and public health. It also helps preserve genetic resources and biodiversity.

- They can treat various human diseases and ailments.
- They can improve public health.
- They can preserve genetic resources and biodiversity.
- They can guarantee the preservation of plant species diversity.

MEDICINAL PLANT GARDEN

Title of the Event: Add on Course [**Herbarium Techniques and Plant Nomenclature]**
Organizing Department: Department of botany
Date: 17/10/2023 to 24/11/23
Time: 30 Hours
Mode: Online and offline.
Number of students: 14
Programme Teachers: Mr. Subir Neogi, Mr. Indrajit Ghosh and Mr. Taraknath Halder

Educational importance: These herbaria serve as a quick source of reference in taxonomic studies. They are also very useful as they provide information about the local flora and fauna. With the help of this information, student can locate the wild varieties and their relatives of the economically weaker plants. Herbarium techniques and plant nomenclature are crucial for accurate plant identification and classification, serving as the foundation for studying plant diversity, distribution, and evolutionary relationships, allowing scientists to communicate clearly about plant species globally by providing a standardized naming system, which is essential for research in taxonomy, ecology, conservation biology, and ethnobotany



BROCHURE FOR THE ADD-ON COURSE "HERBARIUM TECHNIQUES AND PLANT NOMENCLATURE"

Title of the Event: Webinar on "Molecular informatics with DNA Fingerprinting and Forensic Palynology"
Organizing Department: Department of Botany with IQAC
Date: 12/09/2020
Time: 6 p.m.
Venue: Google meet and You Tube.
Resource Persons: Dr. Partha Deb Ghosh (Emeritus Professor, Department of Botany, University of Kalyani), Dr. Saubashya Sur (Assistant Professor, Post Graduate Department of Botany, Ramananda College, Bishnupur), Dr. Sandip More (Assistant Professor, Department of Botany, Krishnath College, Murshidabad).
Title of the Webinar: Molecular informatics with DNA Fingerprinting and Forensic palynology.

Educational importance: The Department of Botany of Gour Mohan Sachin Mandal Mahavidyalaya in association with IQAC of the college organized a 'webinar' on 12/09/2020 at 6.00 P.M. Dr. Saubashya Sur (Assistant Professor, Post Graduate Department of Botany, Ramananda College, Bishnupur) was the resource person of the event. He discussed about Molecular informatics which aims to develop artificial intelligence method that design functional biomolecules such as protein. Dr. Partha Deb Ghosh (Emeritus Professor, Department of Botany, University of Kalyani) was the resource person of the event. He discussed about DNA fingerprinting as a laboratory technique used to determine the probable identity of a person based on the nucleotide sequences of certain regions of human DNA that are unique to individuals. DNA fingerprinting is used in a variety of situations, such as criminal investigations, other forensic purposes and paternity testing. In these situations, one aims to "match" two DNA fingerprints with one another, such as a DNA sample from a known person and one from unknown person. Dr. Sandip More (Assistant professor, Department of Botany, Krishnath College, Murshidabad) was the resource person of the event. He discussed about forensic palynology as a sub discipline of palynology (the study of pollen grains, spores, etc.), that aims to prove or disprove a relationship among objects, people, and places that may pertain to both criminal and civil cases. Altogether 70 participants ranging from students, teachers, to non-teaching staff joined the google meet and 838 views on you tube programme. There has been positive feedback from the participants.

Brochure of the Webinar

Picture of the webinar streamed on You Tube

Title of the Event: Visit to a tissue culture lab and educational institute
Organizing Department: Department of botany
Date: 30/11/2022
Time: 11.30 am
Number of students: 16
Place: Vivekananda Institute of biotechnology, Nimpith, South 24 Parganas.
Details of the event: The Department of Botany of Gour Mohan Sachin Mandal Mahavidyalaya organized a visit to a tissue culture lab and educational institute at Vivekananda Institute of Biotechnology, Nimpith South 24 Parganas on 30/11/2022. There were altogether 16 participants including students and 2 departmental teachers.

Medicinal plants are sometimes propagated through tissue culture. The benefits of doing so is to produce high quality of medicinal plants in a limited time. In such, the students possessed procedural knowledge related to what to prepare and how to conduct tissue culture. The students were taken to sterilization, media preparation, inoculation and incubation areas; and the tissue culture techniques were briefed to them stage-by-stage by the experts. The students were also taken to the green houses, where they observed the plant lets that were subjected to the hardening process. The intention of this field trip is to make the students understand the significance of plant tissue culture techniques for crop improvement.

Vivekananda Institute of Biotechnology, Nimpith

Students with guide in Laboratory

Title of the Event: Visit to a botanical garden and central national herbarium.
Organizing Department: Department of Botany
Date: 07/12/2022
Time: 11.30 a.m.
Number of students: 20
Place: Acharya Jagadish Chandra Bose Botanical Garden, Howrah.
Details of the event: The Department of Botany of Gour Mohan Sachin Mandal Mahavidyalaya organized a visit to a botanical garden and central national herbarium at Acharya Jagadish Chandra Bose Botanical Garden, Howrah on 07/12/2022. There were altogether 20 participants including students and 2 departmental teachers.

Educational importance: It is a place where a variety of endangered flora are conserved. It helps in taxonomic study. It provides the public with information about local and exotic species of plants. Rare species and genetic diversity are conserved and propagated in a botanical garden. They give on-site teaching opportunities about plants, their collection and their classification. Students can see the name of the plants, both the scientific and the vernacular names in local languages. They can also learn their use, which can be ornamental, medicinal, food, technical or scientific. While the ornamental character of the plants is immediately visible, other uses must be indicated to the public. The herbarium is used as a repository for the study of plants specimen. Herbarium provides instant referrals in taxonomical studies. They give histological and geographical information about different plant species. Specimens in herbaria are very useful to identify plants growing here or elsewhere. Plant specimens preserved in an herbarium represent the best record of the plant's original distribution. The students can observed this information to understand changes due to habitat loss, climate change or other impacts by humans. For students, visiting the botanical garden lead to stress relief and relaxation and the value of improved quality of life.

All students at Acharya Jagadish Chandra Bose Botanical Garden

Students with guide in front of Palm house

Title of the Event: Visit to a local field study.
Organizing Department: Department of Botany
Date: 22/12/2022
Time: 11.30 am
Number of students: 10
Place: Madhabpur, South 24 Parganas.
Details of the event: The Department of Botany of Gour Mohan Sachin Mandal Mahavidyalaya organized a visit to a local field study in Madhabpur, South 24 Parganas on 22/12/2022. There were altogether 20 participants including students and 2 departmental teachers.

Educational importance: It is a place where a variety of plant species are identified. It helps in taxonomic study. It provides the public with information about local species of plants. Students observed plant species and collected plant parts and identified them from study site. The students studied the natural habitats and characters of the plants found in the area and to collect plants species for herbarium preparation submission for examination.

The major objective was to familiarize the students with the flora & ecology of the region. It was also to acquaint them with the importance of flora of forest area and the threats these ecosystems face due to natural and anthropogenic pressures.

Students with teachers during the field visit

Title of the Event: Visit to a medicinal plant garden.
Organizing Department: Department of botany
Date: 24/02/2018
Time: 11.30 am
Number of students: 7
Place: Narendrapur Ramakrishna Mission.
Details of the event: The Department of Botany of Gour Mohan Sachin Mandal Mahavidyalaya organized a visit to a medicinal plant garden at Narendrapur Ramakrishna Mission, South 24 parganas on 22/12/2022. There were altogether 7 participants including students and departmental teachers.

Educational importance: The objective of the medicinal garden is to create awareness of conservation and traditional uses of herbs and medicinal plants to visitors, and to also be a place where students can learn how to identify and conserve these important plants.

Medicinal plants provide major source of molecules with medicinal properties due to the presence of natural compounds. Medicinal plants are useful for curing human diseases and play an important role in healing due to presence of phyto chemical constituents. This encourage students to use herbs in food. The students identified different types of herbs and their uses of growing them in a garden.

Medicinal plant gardens are primarily focused on the conservation, cultivation, research and educational activities related to plant species known for medicinal purposes. However, these gardens also equally provide services related to other plant species whose primary use is not for therapeutic practice

Title of the Event: Intra college photography competition on ‘’ A TREE IS A LIFE”
Organizing Department: Department of Botany with IQAC
Date: 22/12/2022
Time: 11.30 am
Number of students: 20
Venue: Online mode

Educational importance: The department of Botany of Gour Mohan Sachin Mandal Mahavidyalaya in association with IQAC of the college organized an Intra College photography competition on ‘’ A TREE IS A LIFE” on 24th February, 2023 at 1.00 P.M.

The aim was to encourage photography to help students bridge subjects that feel distant and abstract, whether temporally, geographically or culturally. It is a particularly helpful tool for teaching about culture. We can find beauty of tree in our lives through photography. Using a camera to find beauty in the things and people around us, helps us to see things in a different light. A wonderful therapeutic benefit of photography, is that it can help us see the beauty surrounding us. We just have to take a moment to stop and look. The students thoroughly enjoyed participating in this event. There were altogether 20 participants including students, teaching and non-teaching staff.

Title of the Event: Poster presentation competition
Organizing Department: Department of Botany
Date: 22/12/2022
Time: 11.30 a.m.
Number of students: 15
Venue: Department of Botany
Details of the event: The department of botany of Gour Mohan Sachin Mandal Mahavidyalaya organized on a poster presentation competition on 22/12/2022 at 11.00 a.m. There were alltogether 15 participants including students and teachers.

Educational importance: Poster competition is a simple way to absorb information for those more comfortable with pictures than words. It's an effective way for students to draw attention on topics and to maintain their interest. Posters are used to motivate students to learn specific topics. Posters help learners to focus on a certain idea, event, fact or process. This can make it even more effective to facilitate learning. Posters can have quite a positive effect on the process of learning. The best advantage of poster making is that it facilitates team work and understanding along with facilitating creative thinking and extensive research and reading.

Posters can be a highly effective means of advertising and promoting a product, service or event. They are a visual medium that can quickly capture the attention of a target audience, convey key information, and leave a lasting impression. One of the main advantages of posters is that they can be highly targeted. One of the ways in which posters encourage students to think critically and creatively is by presenting them with visual information that they need to interpret, analyze, and evaluate.

Poster Presentation event

Title of the Event: Field study visit to Darjeeling and Mirik
Organizing Department: Department of Botany
Date: 27/04/2023 -30/04/2023
Number of students: 24
Place: Darjeeling and Mirik
Details of the event: The Department of Botany of Gour Mohan Sachin Mandal Mahavidyalaya organized field study visit to Darjeeling and Mirik from 27/04/2023 to 30/04/2023. There were altogether 24 participants including students and 2 departmental teachers.

Educational importance: It is a place where a variety of plant species are found and identified, owing to the cold climate of the hill regions of Darjeeling and Mirik. It helps in taxonomic study. It provides the public with information about local species of plants. Students observed plant species, collected plant parts and identified them from study site. The students studied the natural habitats and characters of the plants found in the area and to collect plants species for herbarium preparation submission for examination.

The major objective was to familiarize the students with the flora & ecology of the region. It was also to acquaint them with the importance of flora of forest area and the threats these ecosystems face due to natural and anthropogenic pressures. For students, visiting the hilly regions of Darjeeling and Mirik was very knowledgeable and beneficial.

Students with teachers at Tiger Hill

Students with teachers at NJP Railway Station

DEPARTMENTAL LIBRARY

Sl. No.	Name of the Books	Author	No. of copies
01.	Algae (Botany for degree students)	B.R. Vashishta, A.K. Sinha, V.P. Singh	1
02.	Fungi (Botany for degree students)	B.R. Vashishta, A.K. Sinha	1
03	Text Book of Algae	P.D Sharma	1
04.	Text Book of Fungi	P.D Sharma	1
05.	Plant Tissue Culture	M.K. Razdan	1
06.	Dictionary of Plant Sciences	Oxford	1
07.	Bryophyta (Botany for degree students)	B.R. Vashishta, A.K. Sinha, Adarsh Kumar	1
08.	Environmental Chemistry	A.K. De	1
09.	Plant Biology	Lack & Evans	1
10.	Biological Science	Taylor, Green, Stout	1
11.	Developmental Biology	Twyman	1
12.	Fundamentals of Ecology	Thomson	1
13.	Snatak Udvidbidya Sem-III	Shikdar, Sen, Giri	1
14.	Snatak Udvidbidya Sem-II	Shikdar, Sen, Giri	1
15.	Snatak Udvidbidya Sem-I	Shikdar, Sen, Giri	1
16.	Parikshagare Udvidbidya (Sem-II)	Sen, Choudury	1
17.	Parikshagare Udvidbidya (Sem-I)	Sen, Choudury	1
18.	Udvidbingan (PART I)	Mitra,Guha, Choudury	2

LABORATORY FACILITIES

LIST OF INSTRUMENTS

- Binocular microscope
- Simple microscope
- Compound microscope
- Spectrophotometer
- Water bath
- pH meter
- Autoclave
- Hot air oven
- Incubator
- Hot plate
- Centrifuge
- Pan balance
- Digital balance
- Burette with stand
- Necessary glass wares

SWOC ANALYSIS OF THE DEPARTMENT

STRENGTHS

1. Regular attendance of the students
2. Students' sincerity and their interest on the subjects.
3. Field study.

WEAKNESSES

1. Lack of spacious classroom.
2. Paucity of library books.
3. Limited number of laboratory equipments.

OPPORTUNITIES

1. Dynamic subject which the students can utilize for career prospects

CHALLENGES

1. Need to improve laboratory room and add equipments.
2. Add more CCF books to the departmental library.

FUTURE PLANS

1. To augment library and laboratory resources.

CONCLUSION

The department of Botany wants to give thanks to our honorable Teacher in-charge, Dr. Debprasad Mandal and our fellow faculty members and colleagues for their support and whole-hearted cooperation.

Our objective is to lead our students to light the candle of higher education in an area of daily wage-earners. We hence forth look forward to the kind consideration of the government for promoting us to build a better future for the new generation.

It’s a great honor to have the opportunity to offer thanks to the NAAC Peer Team for giving us their valuable time to kindly and patiently go through our departmental activities as provided in the departmental profile.

Thanks to the honourable NAAC Peer Team for their visit to our department. In anticipation and soliciting necessary help for betterment of the department as well as the college.