

E- PROSPECTUS FOR PG PROGRAMME 2024

Post Graduate Department of Botany



BIDHANNAGAR COLLEGE

EB-2, SECTOR -1, SALT LAKE, KOLKATA-700064

Eligibility Criteria

A candidate who has passed the three year B.Sc. examination with Honours (Major) in Botany will be eligible for admission to this course on the basis of merit. Online admission process will be notified in the college website <https://www.bidhannagarcollege.org/>

Total number of seats- 18

The duration of the course

Duration shall be two academic years and the examination for the M.Sc degree in Botany shall be held in four semesters over a total of 1200 marks. The duration of the semester shall be as follows:

1st Semester July - December

2nd Semester January -May

3rd Semester July - December

4th Semester January -May

Course layout

The course shall comprise a total credit of 92 (ninety two), and a total of 1200 marks distributed over the four semesters. The courses shall be grouped as Departmental core courses, and Electives comprising of DSE, SEC & AECC and will carry credits according to the number of theoretical classes required, study hours and laboratory hours. Detail syllabus can be seen at the end of the prospectus

DETAILS OF FEES AT THE TIME OF M.Sc. & M.A. ADMISSION

BIDHANNAGAR COLLEGE PG COURSES			MA	MSC
		Head of Account	Rs.	RS.
Semester 1	1	Tuition Fee	750	960
	2	Admission fee	100	100
	3	College examination	10	10
	4	Library Caution Deposit	25	25
	5	Laboratory Caution Deposit	30	30
	6	Student Activity Fee	500	500
	7	Identity Card	50	50
	8	Library Card	50	50
	9	Session Charge	50	50
	10	Students Health Home Fee	10	10
	11	Magazine Fee	125	125
	12	Library Fees@ 10/- per month	120	120
	13	Student Aid Fund	25	25
	14	Student management system	250	250
	15	Semester Fee	2000	2000
	16	Sem 1 Exam Fee	1500	1500
		Total	5595	5805
Semester 2	1	Tuition Fee	750	960
	2	Semester Fee	2000	2000
	3	Sem 2 Exam Fee	1500	1500
		Total	4250	4460
Semester 3	1	Tuition Fee	750	960
	2	Admission fee	100	100
	3	College examination	10	10
	4	Session Charge	50	50
	5	Magazine Fee	125	125
	6	Library Fees@ 10/- per month	120	120
	7	Student management system	250	250
	8	Semester Fee	2000	2000
	9	Sem 3 Exam Fee	1500	1500
		Total	4905	5115
Semester 4	1	Tuition Fee	750	960
	2	Semester Fee	2000	2000
	3	Sem 4 Exam Fee	1500	1500
	4	Certificate Production Fee	50	50
		Total	4300	4510
2 Years total Fees (Rs.)			19050	19890

* Items under Semester 1 (Nos. 1-15; total Rs. 4095/- for MA course and Rs. 4305/-for M.Sc courses) are to be paid at the time of admission. Other fees are to be paid later.

* The fees are subject to change as per the directives of the authority.

* Students will have to bear their own expenses as and when required for doing fieldwork / excursion as a requirement for the course curriculum.

1. Brief history of the Department

To endow the youth with knowledge and practical skills in Plant Sciences, the Bidhannagar College Botany Department started a General Course in 1997, under the University of Calcutta. In 2002, Botany Honours course was introduced with the requisite infrastructure. Ninety per cent students obtained first class in the very first batch. Since 2008, the Department is affiliated to the West Bengal State University. The Post Graduate Course was introduced in 2019 with the approved intake capacity of 15 (Fifteen) students. Beginning with the academic session 2019-20, three batches of students have successfully completed the Master Degree Course. From the academic year 2023-24 the number of seats has increased from 15 to 18.

There are 08 sanctioned teaching posts (WBES), where the faculty members are from diverse fields of Plant Sciences and they have altogether 19 publications in reputed National and International journals in the last five years. There is a well-stocked Seminar Library with 410 books, besides over 400 books in the Central library. There is internet facility and three SMART class rooms, equipped with projectors, PEN display and Sound system. The Department carries out National Level seminars (seminar 'Teaching Botany in 21st Century: Prospects and Challenges' 2016), Invited Talks, Lectures and Botanical excursions. Besides, the students are encouraged to participate in debates, workshops, games-sports and other extracurricular activities both in and outside the campus.

2. Department infrastructure

A) Space

The total floor space of the department is 2500 sq ft. spreading over 1st floor and 2nd floor of the Old Building. It includes four theory class rooms, two general laboratory, one Biochemistry laboratory, one genetics lab, seminar library, staff room, HoD chamber and one store room. There are two rooms under renovation in 1st floor which are going to be dedicated PG laboratories of 800 sq ft. The Department possesses 3 computers, 2 laptops and 2 printers with high speed internet connection.

B) Books

The department has a well-stocked Seminar Library with 410 books and all the books are systematically arranged and catalogued. Besides, day lending, the students are allowed to borrow books fortnightly.

C) Herbarium and Museum

Department has more than hundred Museum specimens (both wet and dry) belonging to lower group as well as higher group of plants. These include specimens collected from Meghalaya (*Nepenthes* sp), Ladakh (*Ephedra* sp) and other far off places in addition to the locally available specimens, disease specimens and pteridophytes from the Himalayas (*Lycopodium*, *Pinus* etc.). Besides, there is a Herbarium containing 256 Herbarium sheets of which a number of specimens were collected from the mangrove forests of Sundarban areas.

D) Parasar Udyan – A medicinal plant garden (approx. 550 m² areas) is present in the college campus with many important medicinal plants.




E) Equipments

Department is equipped with a number of instruments for students routine practical class as well as research study. Some of the important instruments are - DNA and Protein Gel Electrophoresis, Unit Camera fitted Microscope, Laminar air flow, BOD incubator, Seed germinator, Centrifuge, digital balance. There are also plenty of simple and compound microscopes, besides two Binocular microscopes.



Picture 1: View of the departmental Instruments**F) Faculty profile**

The department is enriched with 07 permanent faculty members of different fields as follows-

1.	 <p>Dr. Santanu Saha M.Phil., Ph.D. Associate Professor and Head Specialisation: Ecology</p>	<p>Dr. Saha has 31 years of UG teaching experience including 15 years of PG teaching experience. He has earlier served in Darjeeling Govt. College, Hooghly Mohsin College, Barasat Govt. College, Taki Govt. College. He has 18 years research experience with 19 publications (16 in journals and 3 in edited books). He has carried out UGC funded MRP. He is a reviewer in several national & international journals and is editorial board member besides being Life member of Indian Science Congress Association.</p>
2.	 <p>Sri Benudhar Mandal M.Sc. Associate Professor Specialisation: Microbiology</p>	<p>Sri Mandal has 30 years of teaching experience including 19 years of PG teaching experience. He has earlier served in Darjeeling Govt. College, Durgapur Govt. College, Barasat Govt. College. He has one publication and has carried out one UGC funded MRP.</p>
3.	 <p>Dr. Bharati Mukhopadhyay Associate Professor, Ph.D. Specialisation: Plant Physiology and Biochemistry</p>	<p>Dr. Mukhopadhyay has 25 years of UG teaching experience including 9 years of PG teaching. She has earlier served in Bethune College and Durgapur Govt. College. She has 07 published papers, 03 books (published from Lap Lambert Academic Publishing AG) and have authored 03 Distance Education Modules. She has published 2 Text Books on Plant Physiology (CC-BT-09) and Biomolecules, Plant Metabolism (CC-BT-10) for Under Graduate Degree Programme (CBCS) in Botany Honours for Netaji Subhas Open University. She is a member of Plant Physiology Forum and Botanical Society of Bengal.</p>

4.	 <p>Dr. Kajari Lahiri, Ph.D. Associate Professor Specialisation: Plant Physiology and Biochemistry</p>	<p>Dr. Lahiri has 22 years of UG teaching experience including 10 years of PG teaching. She has earlier served Krishnagar Govt. College, Bethune College, Barasat Govt. College. She has 06 publications, and has acted as an evaluator of state level children science congress in 2016. She has carried out one UGC funded MRP and is a member of Plant Physiology Forum, Central Calcutta Society for Advancement of Human Research Development.</p>
5.	 <p>Dr. Mousumi Mukhopadhyay, Ph.D. Associate Professor Specialisation: Taxonomy of angiosperm</p>	<p>Dr. Mukhopadhyay has 17 years of teaching experience including 7 years of PG teaching. She has earlier served in Darjeeling Govt. College. She has 4 publications in National Journal and one Book chapter and 2 papers in International Proceedings. She has completed one UGC funded MRP and is a member of Indian Association of Angiospermic Taxonomy and Botanical Society of Bengal.</p>
6.	 <p>Dr. Kausik Majumder, Ph.D. Associate Professor Specialisation: Plant Physiology and Biochemistry</p>	<p>Dr. Majumder has 17 years of teaching experience including 7 years of PG teaching. He has earlier served in Darjeeling Govt. College. He has 15 publications in National and International Journals. He has carried out one UGC funded MRP. He is a reviewer in academic journals.</p>
7.	 <p>Dr. Subhadipa Sengupta, Ph.D. Assistant Professor Specialisation: Cell Biology, Molecular Genetics and Plant tissue culture</p>	<p>Dr. Sengupta has 14 years of UG teaching experience and 17 years of research experience. She has earlier served Baruiipur College. She has 05 publications in International journals. She is actively engaged in Plant endophytic microbe interaction study. Her project was on plant endophyte interaction funded by UGC. She is a member of Indian Science Congress Association and Botanical Society of Bengal.</p>

G) Students profile

Students from both urban and rural areas of the state enroll in the department.

a) **Student-Teacher ratio**

Academic Session (PG)	Total no of students	Total no of Teachers	Student-Teacher ratio
2019-20	10	8	10:08
2020-21	11	8	11:08
2021-22	11	7	11:07
2022-23	12	7	12:07
2023-24	11	7	11:07

B) PG Student Results

Academic session(PG)	Total No. of Students	1 st Class marks	2 nd Class marks
2019-21	10	10	NIL
2020-22	11	11	NIL
2021-23	11	10	1 (discontinued)
2022 - 24	11	-	-

Name of the Student	Year of Graduation	Achievement
Ayush Trivedi	2018	Completed Masters from IIT Rurki , JAM (Rank 20) in 2020, currently working in Byju's as a team leader
Atri kumar Sinha	2018	Completed Masters from University of Kalyani, now working as a guest scholar in Kalyani University Plant Pathology laboratory

Kaustav Gupta	2018	Completed Masters in Media Studies in 2020, currently working as a Creative director in a Production House in Mumbai
Nalonda Chatterjee	2020	Completed M.Sc. in National Chung Cheng University, Taiwan from Department of Earth and Environmental Sciences. Now pursuing Ph.D. in Zurich, Switzerland
Amit Roy	2020	Academic content writer in Elite research and analysis.
Sayak Kar	2020	Customer Associate and floor support, Globiva company.
d) Brief Achievement of our ex- students		
Name of the Student	Year of Graduation	Achievement
Santosh Kumar Jana	2015	Qualified Lectureship in CSIR-UGC NET Qualified GATE Life Science 2020 and 2021, conducted by IIT Delhi and IIT Bombay respectively. Presently doing PhD in Microbiology at Laboratory of Molecular Bacteriology, Department of Microbiology, University of Calcutta Under Dr. Sukhendu Mandal's supervision.
Subhankar Bose	2015	Qualified JRF in CSIR-UGC NET. Presently working as CSIR-Junior Research Fellow in Cancer Therapeutics & Chemoresistance Lab CSIR- Indian Institute of Chemical Biology, Kolkata
Biswajit Ray	2015	Qualified JRF in CSIR-UGC NET. Presently working as a Research scholar in Plant molecular Biology, Department of Biotechnology, University of Calcutta,

H) Departmental Activities- The department carries out various indoor and outdoor activities throughout the year where the students actively participate

- i) **Excursions** -To get a fair knowledge of plants it is not enough to study from books, but it is essential to study the plants in their natural habitat. The main aim objectives of botanical excursion are study of plants in their natural habitat, relation of different groups of plants with different environment, the association of different groups of plants and the study of topography and strata of plants community in different localities. Department of Botany regularly organizes various educational excursions to explore floristic diversities in different phytogeographical regions such as Vizag- Araku and adjoining region, Ajodhya Hills of Purulia, Taki and surroundings, Sunderban, and Charkhol – Chotomangoa of Darjeeling districts of West Bengal. Last year both UG and PG students visited Manas National Park (Assam) and Shillong (Meghalaya) for the collection of high altitude plants. Visit of Central National Herbarium and AJC Bose Botanic which are integral part of Students Curriculum are regularly conducted by the Department.

Note: Participation in local and outstation excursions are mandatory during the course of study and that the same is self-funded. The college or department shall not bear the expenses whatsoever.



Picture 2:..Excursion at AJC Bose Indian Botanic Garden

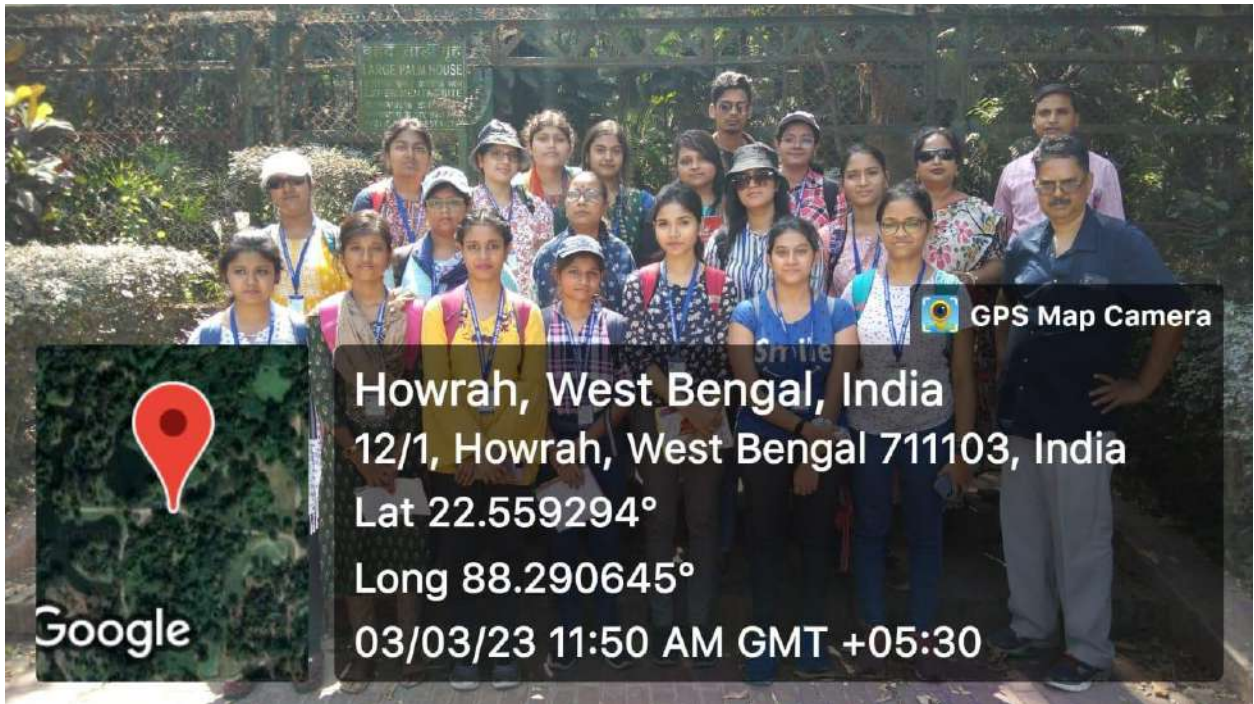


Picture 3: Excursion at Vizak and Araku

Picture 4: Excursion at Taki



Picture 5: Excursion at Charkhol, Darjeeling Dist. May, 2022



Picture 6: Botanical Excursion to AJC Bose Indian Botanic Garden, Howrah, with PG student 2023



Picture 7: Excursion at Manas National Park (Assam) and Shillong (Meghalaya) 2023**Picture 8: Plant collection at Manas (Assam), 2023****ii) Invited Lectures, seminars and workshops-**

The Department has a Science Club involving both the faculty members as well as the students. The Club regularly organizes invited lectures on diverse fields. The invited Speakers range from distinguished professors to emerging young researchers to successful technology entrepreneurs. It is believed that these lectures are an efficient way of introducing students to variety of field of studies. Department has also carried out career oriented lectures as well as national level workshop on herbarium methodologies and Macrofungal Taxonomy Including Phylogenetic Analysis organized by the PG Department of Botany in collaboration with BSI, India.



A



B

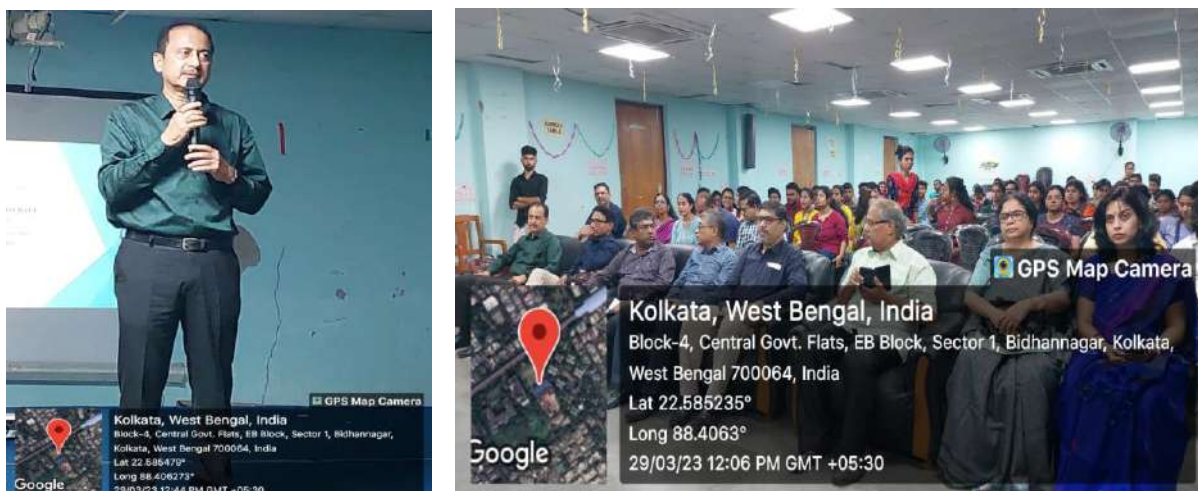


C



D

Picture 9: Lecture by Dr. Arup K. Mitra, Associate Professor, Microbiology, St. Xavier's College Autonomous, Kolkata B. Invited lecture by Dr. Zahed Hossain, Professor, Kalyani University on May, 2022 C. Invited Lecture by Dr. A. Roy [Scientific Officer, WBBDB] D. Webinar By Dr. D. P. Duari, Director, M P Birla Planetarium, Kolkata on August, 2020.



Picture 10: Lecture on the theme – ‘Career in The Indian Armed Forces’ organized by the PG Department of Botany, 2023



Picture 11: Two days National Level workshop on Herbarium Methodology and Macrofungal Taxonomy Including Phylogenetic Analysis organized by the PG Department of Botany



Picture 12: Hands-on training for macrofungi identification





Picture 13: Visiting other laboratories

iii) Conducting Value Added Course in Computational Biology and Bioinformatics

The students were able to understand the type of data and databases in Bioinformatics which enabled them to fathom the dimensions and variety of biological data. In addition, they were able to learn different data mining methods from databases and basic sequence-based analysis.



iv) Students' participation in sports, debates and other cultural activities

Students of the Department actively participate in college sports every year. This year they have achieved the Inter- departmental Championship Trophy, 2022.



A



B



C



D

Picture 14 A, B, C, D: Different events and group photo in the college annual sports

v) Wall Magazine

Students actively contribute to the articles in the wall magazine. The articles are usually on diverse topics of science in general and botany in particular.



Picture 15: Departmental wall magazine published by the students, 2022

vi) **Participation in various indoor / outdoor activities-**

SI No.	Particulars	Time	Purpose
1.	Awarded 1 st Prize in poster presentation for the celebration of World Environment Day organized by NSS unit Bidhannagar College on the theme 'solution to plastic pollution'	June, 2023	To present scientific poster by UG Sem 6
2.	National Science Day celebration organized by BNC on the theme 'Science from different perspectives (English) on Nana Angike Bigyan Bhavna	February, 2022	To present scientific poster by UG Sem 6
3.	Active participation in Acharya Satyendra Nath Bose Bijnan o Projukti Melaorganised by Paschim Banga Bijnan Mancha, Kolkata	January, 2018	To present scientific model by 1 st year students
4.	District Science Fair organized by District Youth Office, Barasat, N 24 Paraganas	January, 2018	To present scientific model by 1 st year students
5.	Attending work shop on medicinal plant propagation	January 2018	Method of cultivation at RK Mission, Narendrapur



Picture 15. Plantation programme in the college premises (left) and Human Rights Workshop (right)



Picture 16. Seminar at Banabitan

Analysis of the Department and Future Plans:-

a) Strength

Teaching and learning is of excellent standard

Teachers highly qualified, with 90% of them holding Ph.D. degree;

90% Teachers with postgraduate teaching experience

50% Teachers actively engaged in research

Teachers are very responsible and efficient in administrative work, heading several important committees of the college;

Computers and Internet facility is available;

- Smart class room dedicated for Honours students;
- Well equipped two general laboratory and one biochemistry laboratory with basic and sophisticated instruments;
- Department is holding parent teacher meeting regularly to interact with the parents for student progression;
- Well stocked and recorded Seminar Library and Book Bank;

- Medicinal Garden maintained by the department containing 35 different types of medicinal plants;
- Science Club of the department organizes invited lectures regularly;
- Students actively participate in all departmental and college activities with keen interest in Botany, Nature and Environment

b) **Weakness**

- Shortage of class rooms and laboratories;

c) **Oppertunities**

- Minor and Major Research Projects in different areas of interest;
- Encouragement and counseling of students for higher education and research;
- Guidance of students for UGC-CSIR-NET.

d) **Challenges**

- Despite the lack of academic autonomy, there is an effort to create deep interest in the subject through innovative teaching in the class room and in the field trips;
- Accommodate and evaluate the potentiality of annual increase in student strength especially from backward/distant places.

e) **Future Plans**

- To increase the space for smart class rooms, laboratory, herbarium, museum and library;
- To enhance the number of research projects and collaboration with other departments and Institutes;
- To increase the number of remedial and tutorials classes for weak students;