

26th November, 2022

**A REPORT ON ONE DAY INDUSTRIAL VISIT TO
THACKER DAIRY PRODUCTS PVT. LTD.
ANDUL, HOWRAH**

Department of Microbiology



**Asutosh College,
92, SP Mukherjee Road, Kolkata-700026**

Organized by

Dr. Kuntal Kanti Goswami, Asst. Professor & Head

Dr. Pranab Kumar Das, Asst. Professor,

Dr. Gajendranath Maity, Asst. Professor,

Dr. Sankar Chandra Basu, Asst. Professor,

Asutosh College, Kolkata

&

Dr. Kartik C Mohanty, Director,

Thacker Dairy Products Pvt. Ltd., Kalyani



➤ **OUR GROUP PHOTO AT THACKER DAIRY INDUSTRY, ANDUL, HOWRAH, WEST BENGAL**

1.OBJECTIVE

A batch of 5th semester students of Department of Microbiology, Asutosh College along with faculty members, Dr. Kuntal Kanti Goswami, Dr. Pranab Kumar Das, Dr. Gajendranath Maity, Dr. Sankar Chandra Basu, visited Thacker Dairy Products Pvt. Ltd. at Andul in Howrah, West Bengal. This visit was mainly focused to understand the procedures involved in making various dairy products as pasteurized milk, paneer, ghee, ice cream as well as fermentation technology related to manufacture of flavored dahi.

Students were split into two groups. The officers of the plant explained about the facilities available inside the center, their methods of pasteurizing milk and simultaneous packing, the equipments used for the procedures, etc. They also explained about the maintenance of equipments and corresponding fermentation technology. All the students participated enthusiastically and gained a sound knowledge of the various techniques. The detailed report is described as follows.

2. VARIOUS DEPARTMENTS

2.1 Pasteurized Milk Production Unit: the milk collected from various locations of West Bengal, viz. Kalyani, Burdwan, are brought to the factory via carriers and stored in tanks for further pasteurizing before packaging. Milk is first homogenized before passing them through vents or pipes for pasteurization, the machine used is a homogenizer that distributes fat globules in milk equally.

The pasteurization technique used in the factory is HTST method which stands for High-temperature short-time (72°C and 10 seconds).

The pasteurized milk is sent to the packaging unit through the pipe linings within every unit or department of the factory. Formed-filled-seal technique is availed for the packaging of milk that are then supplied and distributed to customers all over the state.

Photos:



Fig. Milk pasteurization and Packaging unit

2.2 Ghee Manufacturing Unit: raw fat produced in different outlets of the industry are poured in a vat of 1000L capacity where the fat is homogenized, mixed properly to get the desired consistency of ghee which then is transferred through pipelines into the filling machine where 1kg of ghee is filled in sterile PET container, sealed and labelled for distribution to retailers all around the state.

Photos:



Fig. Ghee Manufacturing Unit and packaging

2.3 Paneer Manufacturing Unit: for Paneer production the pasteurized milk is boiled in a large container where chemically the milk curdling is done, using a chemical called Glucono-delta-lactic acid. The colloidal particle is then collected leaving out the whey (the liquid part after curdling). Curd collected is pressed, run through cold water and cut into pieces inside the cold vacuum chamber where they are sent for packaging, then stored in cold room (temperature maintained is 3°C). The units that which are released for distribution are sent via thermoregulated carriers.

Photos:



Fig. Paneer Manufacturing Unit

2.4 Dahi /Curd Fermentation Section: pasteurized milk is filled in large boilers where it is agitated while high temperature is maintained (92°C). While the boiling continues sugar is added in certain stainless tanks for making of sweet curd or in native language as we say “Mishti Doi”. After the process of sugar addition is done, the sweet milk is sent to the tanks where the starter culture is added for curd formation.

The starter culture comprises of Industrially important bacterial strain like:

- *Lactococcus lactis* subsp. *lactis*
- *Lactococcus delbruckii* subsp. *bulgaricus*
- *Lactobacillus lactis*
- *Streptococcus thermophilus*

The total process is time consuming and takes 4 hours for its completion after which the curd is packed in containers and kept in hot room for solidification where the temperature maintained is between 37°C- 40°C, which is the ambient temperature for the process.

Additionally flavored curd is also prepared in the industry which goes by the name “Aam Doi” or Mango flavored curd. The process although remains the same.

Photos:



Fig. Dahi /Curd Fermentation Section and packaging unit

2.5 Ice Cream Manufacturing Section: ice cream manufacturing unit was not observed although the storage unit was seen by us on the day of our visit. The storage unit had a temperature maintained in Celsius scale of a negative 2 to 3 degrees.

3. MICROBIOLOGY AND CHEMICAL LABORATORY UNIT:

In the laboratory, starters culture raw materials and manufactured products are tested. Here, the quality and nutritional value of the dairy products are checked by different methods and compared to the Indian standard maintaining the FSSAI guidelines.

- The following tests are carried out inside the laboratory of the industry:

- i. Hydronium ion concentration or pH value check of raw and finished products
- ii. The quality of the protein present in the dairy product
- iii. Test for SNF (**Fat and Solids-not-fat**)
- iv. RM (**Richard Missel Value**) determined for Ghee to check the adulteration (if any) present
- v. Microbial coliform count by Standard Plate count method (**SPC**) using Plate count agar.
- vi. Chloramphenicol test for yeast
- vii. Methylene Blue Reduction Test (**MBRT**) and Alkaline Phosphate Test (**ALP**) for checking the quality of the milk.
- viii. Even the effluent is tested in the laboratory to maintain a limit of TSS or Total suspended solids, BOD and COD according to the PCB (Pollution Control Board) guidelines.



Fig. Chemical and Microbiological laboratory of Thacker Dairy products, Andul unit.

4. OUTCOME OF THE VISIT

The visit brought a plethora of experience in our academic career and the outcomes listed below are some of them that could be mentioned.

- The practicality of pasteurization unit works in real life.
- How useful bacterial cultures can be in food industry.
- We learned about the starter culture in dairy product.
- We learned about different types of processes of manufacturing. dairy product that we consumed in our daily life.
- Gather information about the various quality checking procedure of the dairy product.

EVENT : EDUCATIONAL TRIP: Reserve Bank of India museum visit

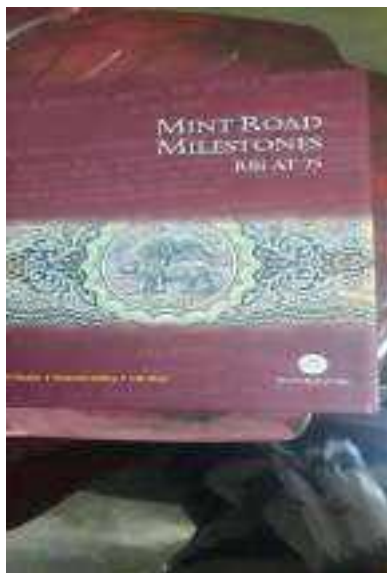
Date: 05.04.2023

Name of the Department: *Economics*

Summary of the event: The sixth-semester students were taken to the Reserve Bank of India museum on 5.4.2023. The program was scheduled after settling the dates with the concerned Reserve Bank of India officials. Around 22 students joined the program. They were accompanied by two teachers of the Department. On arrival, the curator of the museum gave a wonderful presentation showing in detail the history of the Reserve Bank of India. Then the students were shown the transition from the barter economy to the money economy, artefacts relics of yester years as well as a present-day monetary system. They were also shown how RBI printed bonds in previous years. The curator was with the students all throughout the visit explaining the significance of all displayed items of the museum.

Benefits/outcome of the initiative for the students: The students enjoyed their visit. They learned about RBI and its policies on monetary instruments as a part of their course curriculum. Through the displayed items, they could link with what they have learned. It was a good experience for them.

IMAGES:







EVENT: Visit to THE NATIONAL LIBRARY

Date:20.07.2023

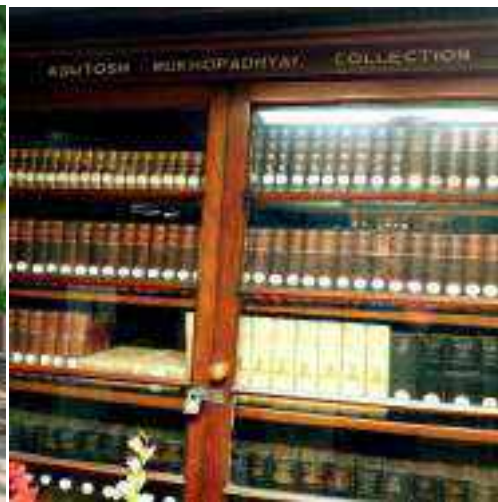
Name of the Department: *Economics*

Summary of the event: The 2nd and 4th semester students were taken to The National Library on 20.07.2023. Around 24 students accompanied by the departmental faculty members attained this field trip. The primary objective of the visit was to inculcate the habit of book reading and accessing library facilities among the students. They visited the Bhasha Bhavan and the section of collection by the eminent educationist and jurist Sir Asutosh Mukhopadhyay.

Benefits/outcome of the initiative for the students: The students enjoyed their trip. They acquired knowledge of availability of books from numerous fields as well the procedure of issuing books, membership rules, reading room rules etc. in the National Library. The Rare Book Division was appeared as very interesting to the students where they were shown manuscripts and printed old rare materials. Visit to the personal collection section of Sir Asutosh Mukhopadhyay which includes several rare books, manuscripts and paintings was very muchinsightfulto the students.

IMAGES:





Report on Seminar Organised by Central Ground water Board, Govt. of India in association with Department of Geology, Asutosh College

According to recent study, the groundwater level in the Kolkata Municipal Corporation (KMC) area is dropping at least one foot per year. The study, based on data from 1985 to 2016, was conducted on the eastern and western banks of the river Hooghly, covering the Kolkata and Howrah cities and their peri-urban areas. For the future survival ground water management of Kolkata and surrounding areas needs more attention. As a consequence Central Ground Water Board(CGWB), Eastern Region, Kolkata under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of JalShakti, Govt. of India have under taken different programs for public awareness and recently they have organized a public interaction program for Kolkata district in collaboration with Department of Geology and IQAQ Asutosh College and Department of Geology, Jogamaya Devi College on - 'Sustainable Ground Water Management in Kolkata Municipal Corporation Area'. The main aim of the program was to increase the awareness of the present crisis and sustainable Ground Water Management among the common people. In doing so, Regional Director of CGWB and Scientists as well as teachers of both colleges share their knowledge through presentations and public interactions.

Title of the initiative: Sustainable Ground Water Management in Kolkata Municipal Corporation Area

Name of the department: Geology

Date and time: 12th August, 2022 at 10:30 am

Venue: Centenary Hall, Ashutosh College, Kolkata

Name of the speakers/resource person:

- 1. Dr. Anadi Gayen, Regional Director, CGWB (ER)**

Topic: Ground Water Sustainability and Future Management Strategy

- 2. Sh. S. M. Hossain, Scientist – D, CGWB (ER)**

Topic: An Overview of Kolkata Municipal Corporation Area in terms of Hydrogeology

- 3. Dr. Ashish Kr. Das, Asstt. Professor of Geology, Ashutosh College**

Topic: Ground Water Scenario, Scope of Management and its Development in India

- 4. Dr. Suparna Dutta, Chemist, CGWB (ER), Kolkata**

Topic: Ground Water Quality: with special reference to drinking water suitability in Kolkata city

5. Dr. Bhaskar Ghosh, Asstt. Professor of Geology, Jogamaya College

Topic: Rainwater Harvesting in Kolkata and surrounding areas and its role in Ground Water Management

6. Dr. Pampiya Chowdhury, Asstt. Professor, Geology, Ashutosh College

Topic: Ground Water Pollution in and around Kolkata Megacity

Organizing Committee: Central Ground Water Board, Eastern Region, Kolkata under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of JalShakti, Govt. of India in collaboration with Department of Geology and IQAQ Asutosh College and Department of Geology, Jogamaya Devi College.

Number of participants: 70

Photos of the Event:



Inaugural Session and welcome address:



Technical session:



Dr. Ashis Kr. Das, Dept. of Geology, Asutosh College



Dr. Bhaskar Ghosh, Dept. of Geology, Jogamaya Devi College



Dr. Pampiya Chowdhury, Dept. of Geology, Asutosh College



Sh. S. M. Hossain, Scientist – D, CGWB (ER)

Interactive session with speakers:



Special Surveying Program conducted by Post Graduate Department of Geography of Asutosh College at Jatin Das Park ground on 12th and 13th June, 2023 using *Total Station*.

Post Graduate Department of Geography faculty members had organized a two days workshop of surveying using *Total Station* instrument procured by the department. Teaching staff along with post-graduate students actively participated in the program to enrich and update the knowledge about Surveying and Levelling. On 12th and 13th June, Dr. Sayantan Das, Assistant Professor of Department of Geography of Dum Dum Motijheel College was invited to share his experience and primary knowledge about applicability of *Total Station* in Geographical field work for the direct benefit of the academic communities.

**TOTAL STATION SURVEY
WORKSHOP CUM FACULTY DEVELOPMENT PROGRAMME**
ORGANISED BY DEPARTMENT OF GEOGRAPHY
IN COLLABORATION WITH IQAC, ASUTOSH COLLEGE



GEOLOGICAL SURVEY OF INDIA TOUR ON 04/03/2023

Few students of the **Department of Geology**, Asutosh College, from UG and PG section, attended Geological Survey of India's Foundation Day program on 04/03/2023. As per the invitation, the students attended both the Eastern region office at BhuVigyan Bhavan, Salt Lake and also the Central Headquarter at Kyd Street, Kolkata. The invitation came from Director, GSI, Mr. Sujit Kumar Panigrahi and also from Director, GSI, Mr. Amitabha Bhattachariya. On that very day, the students were shown different types of rocks, fossils, meteorites, and ores etc. The officials of GSI, described how the EPMA works and also showed them the processes in gem testing.

The few photographs are given below:



Fig 1: Students in front of the GSI building, Kyd Street. Kolkata 16



Fig 2: Director, Mr. Amitabha Bhattachariya with Asutosh College geology students and students of other colleges.



Fig 3: The students of Asutosh College is getting a firsthand experience of seeing some rare meteorites.



Fig 4: Students at the Eastern Region, Salt Lake Bhubigyan Bhavan

Students who participated in the program: (UG AND PG)

UG

1. Anik Roy
2. Tapabrata Pramanik
3. Sayan Chakroborty
4. Subhranil Biswas
5. Shouvik Basu
6. Anuska Sarkar
7. Dishari Chakraborty
8. Priyanka Roy
9. Ankita Roy

PG

10. Soumen Mondal
11. Debkanta Banerjee
12. Sneha Debnath
13. Rohit Dey
14. Prasen saha
15. Upamita karar
16. Arnabi daripa
17. Srijita banerjee
18. Snigdha mondal
19. Chandrachur Roy

Central Groundwater Board - World Water Day – 22.03.2023

CGWB CHQ, conducted an Outreach Programmes on the occasion of World Water day 2023 in different parts of the Country, in which Students, Ground Water professionals of allied line departments and persons working in Grassroots level participated. The theme for this year was "**Accelerating change to solve the water and sanitation crisis**". The venue for the programme in Kolkata was at Hotel Monotel, Sector-V, Kolkata.

Students of 4th Semester M.Sc. Applied Geology attended the above programme on 22nd March 2023. List of students along with a few photographs are furnished below.

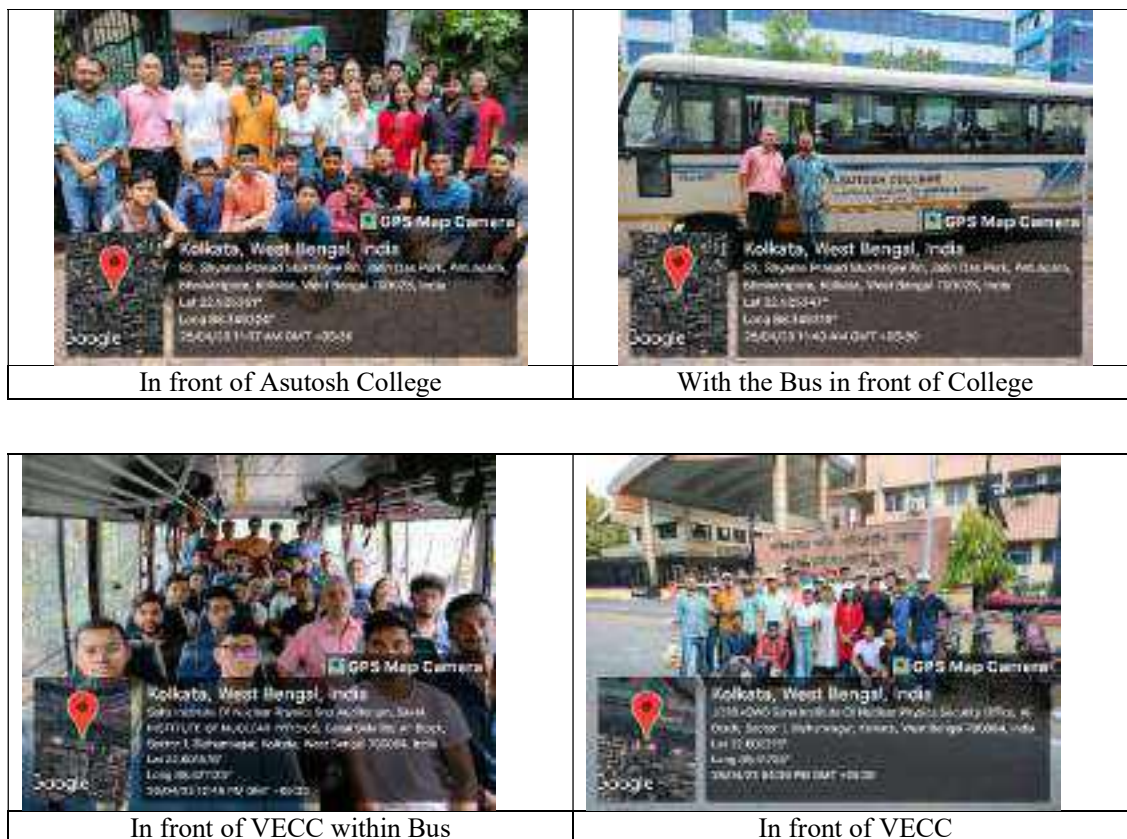
Sl. No.	NAME
1	Arnabi Daripa
2	Chandrachurh Roy
3	Prasen Saha
4	Rohit Dey
5	Debkanta Banerjee
6	Somdutta Ghosh
7	Sneha Debnath
8	Upamita Karar
9	Soumen Mondal
10	Srijita Banerjee





Report on laboratory visit of Semester-VI students of Department of Physics, Asutosh College to Variable Energy Cyclotron Centre (VECC, Department of Atomic Energy, Government of India, 1/AF, Bidhannagar, Kolkata - 700 064 West Bengal, India) on 28/04/2023

The Department of Physics, Asutosh College have arranged a visit for Semester VI Physics (Hon's) students to the Variable Energy Cyclotron Centre (VECC, Department of Atomic Energy, Government of India, 1/AF, Bidhannagar, Kolkata - 700 064 West Bengal, India) on 28/04/2023. Dr. Surjya Sarathi Bhattacharyya and Dr. Parikshit Dutta have accompanied 28 participants from Asutosh College, main building (92, S.P. Mukherjee Road, Kolkata-26) to the VECC campus using Asutosh College Bus. The list of participants is attached herewith. The security have verified identity of all the participants at entrance of VECC and Mr. Arijit Sen (Scientific officer C) as contact person from public awareness cell (PAC) of VECC along with three other delegates accompanied us to their lecture theatre. A brief presentation regarding basics of Cyclotron and their applications starting from cutting edge research to medical requirements was done by PAC of VECC. They have also discussed career opportunities to join as scientific officers at VECC and other Cyclotron Centres with students.



After the presentation and discussions all the participants were subdivided into three small groups for visiting the laboratories. Students have visited the Superconducting Cyclotron (SCC), Room temperature Cyclotron facilities and nuclear detector laboratory available in the campus. The delegates from VECC have explained basic principles along with demonstrations to students. The photography was prohibited within the campus. Thus we have shown only a few pictures outside the VECC campus.

List of participants from Department of Physics Anand College to visit Variable Energy Cyclotron Centre (Department of Atomic Energy, Government of India, 1/AF, Bidhannagar, Kolkata - 700 064 West Bengal, India) on 28/04/2023

Serial Number	Name	Designation	Roll Number	Signature
1	Abinash Mondal	Student- (Semester-VI)		AB
2	Sagnayo Naha	Student- (Semester-VI)	BSC-253	Sagnayo Naha
3	Soumyajit Das	Student- (Semester-VI)	BSC-66	Soumyajit Das
4	Nayan Garai	Student- (Semester-VI)	BSC-171	Nayan Garai
5	Krishnendu Jana	Student- (Semester-VI)	BSC-979	Krishnendu Jana
6	Dipranal Bhattacharya	Student- (Semester-VI)	BSC-300	Dipranal Bhattacharya
7	Swarnil Saha	Student- (Semester-VI)	BSC-726	Swarnil Saha
8	Sagnik De	Student- (Semester-VI)	BSC-1111	Sagnik De
9	Ananya Mondal	Student- (Semester-VI)	BSC-1281	Ananya Mondal
10	Urbankar Mondal	Student- (Semester-VI)		AB
11	Joydeep Das	Student- (Semester-VI)		AB
12	Rohit Dhawa	Student- (Semester-VI)	BSC-713	Rohit Dhawa
13	Ashim Barman	Student- (Semester-VI)	BSC-553	Ashim Barman
14	Arijit Saha	Student- (Semester-VI)	BSC-27	Arijit Saha
15	Anif Nur Parvej	Student- (Semester-VI)		AN
16	Soumyadip Roy	Student- (Semester-VI)	BSC-996	Soumyadip Roy
17	Snyantika Mondal	Student- (Semester-VI)	BSC-21	Snyantika Mondal
18	Deepan Das	Student- (Semester-VI)	BSC-728	Deepan Das
19	Pankaj Rajbanshi	Student- (Semester-VI)	BSC-1111	Pankaj Rajbanshi
20	Swarnika Dutta	Student- (Semester-VI)	BSC-707	Swarnika Dutta
21	Racetan Ghosh	Student- (Semester-VI)	BSC-585	Racetan Ghosh
22	Rohan Majee	Student- (Semester-VI)	BSC-630	Rohan Majee
23	Harsh Kumar Rai	Student- (Semester-VI)		AB
24	Priyanka Chatterjee	Student- (Semester-VI)		AB
25	Sourish Das	Student- (Semester-VI)	BSC-316	Sourish Das
26	Amit Ghosh	Student- (Semester-VI)	BSC-1018	Amit Ghosh
27	Tanul Majumder	Student- (Semester-VI)	BSC-07	Tanul Majumder
28	ACHYUT PRAMANIK	Student- (Semester-VI)	BSC-929	Achyut Pramanik
29	Ananya Mondal	Student- (Semester-VI)	BSC-671	Ananya Mondal
30	Anirban Biswas	Student- (Semester-VI)	BSC-204	Anirban Biswas
31	Souptik Dutta	Student- (Semester-VI)	BSC-103	Souptik Dutta
32	Pratan Paul	Student- (Semester-VI)	BSC-133	Pratan Paul
33	Arnab Biswas	Student- (Semester-VI)		AB
34	Subham Kumar Das	Student- (Semester-VI)	BSC-420	Subham Kumar Das
35	Sourav Kundu	Student- (Semester-VI)	BSC-02	Sourav Kundu
36	Dr. Sujya Sarathi Bhattacharyya	Asst. Professor		Sujya Sarathi Bhattacharyya
37	Dr. Parikshit Dutta	Asst. Professor		Parikshit Dutta

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DEPARTMENT OF BOTANY : FIELD EXCURSION : DOOARS WITH LAVA
TOUR PROGRAMME

DATE OF JOURNEY 23/03/2023
TRAIN NUMBER AND NAME: 13147 UTTARBANGA EXPRESS DEPARTURE
TIME & PLACE SEALDAH STATION AT 19.40PM
REPORTING TIME 18.30PM (INFRONT OF 9A 9B PLATFORM)

- 23/03/2023 Start from Sealdah Station at 19:40hrs by 13147 Uttar Banga Express for New Maynaguri Station . Dinner will be provided. Overnight in train.
- 24/03/2023 Reaching New Maynaguri Station at 07.36hrs. Start from New Maynaguri Station at 08.30hrs by Sumo for Lataguri. Reaching Lataguri at 09.00hrs and transfer at Hotel. Hotel Pasakha Inn (M-9932897255). After Lunch Field Survey and Quadrat Study. Night stay at Hotel.
- 25/03/2023 After breakfast coverage Jhalong, Bindu, Murti, Samsing, Suntalekholja and Rocky Island by Sumo . Field work and plant observation on the way. Night stay at same Hotel.
- 26/03/2023 After breakfast coverage Lava sightseeing by Sumo. Field work and plant observation on the way Night stay at same Hotel.
- 27/03/2023 Morning free and individual activities.(Check out the room within 11.00hrs)After lunch start from Hotel at 14.00hrs by Sumo for Jalpaiguri Road Station. Reaching Jalpaiguri Road Station at 15.30hrs. Start from Jalpaiguri Road Station at 16.42hrs by 13148 Uttar Banga Express for Sealdah Station.
- 28/03/2023 Reaching Sealdah Station at 05.15hrs.

PLEASE CARRY

- 1) Personal I Medicine.
- 2) Original any Photo I-Card.
- 3) College Identity Card.

Accompanying Teachers:

DR. PRADYUT BISWAS (2016953091)
DR. MITHU BISWAS (9735765661)

Non-teaching staff member:

NARENDRA YADAV (9836572569)

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ASUTOSH COLLEGE

DEPARTEMENT OF BOTANY : FIELD EXCURSION : 2023

TRAIN SEAT ARRANGEMENT LIST

	NAME OF STUDENTS	M/F	AGE	COACH	BERTH	
COACH: S1						
T1	PRADYUT BISWAS (TEACHER)	M	45	S1	4/14	
1	SUDESHNA DAS	F	18	S1	26	
2	SNEHALATA NASKAR	F	18	S1	27	
3	DHRITI BISWAS	F	18	S1	29	
4	SREEMOYEE CHATTERJEE	F	18	S1	30	
5	SURAJIT MAUR	M	18	S1	32	
6	AKSHAY PAUL	M	18	S1	40	
7	SRJITA GHOSH	F	19	S1	42	
8	UDITA DAS	F	19	S1	43	
9	DAMINI DUTTA	F	19	S1	45	
10	MOUSUMI DAS	F	19	S1	46	
11	SOUMYAJIT PAUL	M	19	S1	48	
12	SUSMITA MAJUMDAR	F	19	S1	50	
13	PUJA CHATTERJEE	F	19	S1	51	
14	SUMONA MONDAL	F	19	S1	53	
15	SANJUKTA MONDAL	F	19	S1	54	
16	SNEHA BERA	F	19	S1	56	
T2	MITHU BISWAS	F	45	S1	68	
17	SIMRAN CHANDAK	F	19	S1	69	
18	AFRINA REHMAN	F	19	S1	70	
COACH S4						
19	RUDRAPRASAD GHOSH	M	18	S4	38	UR
A1	NARENDRA YADAV	M	44	S4	40	CUR
20	ARGHADEEP RUDRA	M	19	S4	42	MB
21	SUBHRANIL BISWAS	M	19	S4	43	UR
22	ABIR CHATTERJEE	M	18	S4	45	MB
23	SUNDAR CHATTERJEE	M	18	S4	46	UR

THINGS TO REMEMBER

- | | |
|--|---|
| <ul style="list-style-type: none">> Note book and pen> Scissors and Old Copy ½ inch thick size (2nd Sem)>> Camera, charger> Preferably wear sneakers> Carry umbrella/windcheater> Check your belongings while leaving hotel/train.> Xerox copy of Aadhaar card | <ul style="list-style-type: none">> Personal medicine, bandaid, hand sanitizer> Bedsheet and air pillow for train> Warm garments one/two> College ID card.> Mosquito repellent, hand sanitizer> Please carry light luggage that can be carried personally.> Chain lock> Please collect Drinking water from tour organizers or buy mineral water personally> You may carry homemade dry food items of your choice |
|--|---|

FIELD NOTEBOOK

**B.Sc BOTANY(H)
II YEAR (SEM-4)**

CU Roll No. – 213012-11-0025

CU Regn. No. – 012-1211-0612-21

ACKNOWLEDGEMENT

I would take this opportunity to express my sincere thanks and gratitude to Dr. Mithu Biswas for her vital support and guidance in completing this project. I am very grateful to her for her contribution to this report and her teaching and learning that was so important in preparing this report. I would like to extend my gratitude to Dr. Pradyut Biswas who enriched us with valuable information during our excursion.

I would also like to thank them for arranging a wonderful 'Long excursion' and accompanying us and making it a success. It has been an experience of a lifetime.

Dr. Pradyut Biswas -

Pradyut Biswas
21/7/23

Dr. Mithu Biswas -

Mithu Biswas
21/7/23





'group photograph'

Date of visit - 24.03.23



Mountain view
(at lava)



Gymnosperm - Forest
(on the way to Lava)



Murti River Bank

~~Handwritten notes or scribbles, possibly including the word 'Lava'.~~

INTRODUCTION

EASTERN HIMALAYAS

Region - The zone extends in the Himalayas from Sikkim upto Arunachal Pradesh including Darjeeling Hills, Mishmi Hills in upper Assam, Meghalaya and Nagaland.

Climate - Climate warmer, wetter, heavy monsoon rainfall, high humidity and less snowfall than in Western Himalayas.
The Eastern Himalayan Range rises abruptly from the Gangetic plain and hence there are fewer ranges than Western Himalayas.
The abrupt rising of the Eastern Himalayas directly confront the moisture laden monsoon wind from the Bay of Bengal. Also the crescent or horse shoe shaped arrangement of the folds of the mountains ensure higher rainfall.

Endemics - Higher number of endemics, due to their isolation because of the lofty mountains and dry Tibetan plateau to north and





Fern



Shorea robusta



Camellia sinensis

warm alluvial plains of Brahmaputra in South which acts as barrier to plant migration.

PHYTOGEOGRAPHICAL DIVISION : Flora shows more diversity than Western Himalayas and is divided into following zones :-

- * Tropical or Submontane zone - The tropical subzone characterized by warm and humid conditions extends from plain up to the altitude of about 1800 m. Evergreen forests of Dillenia indica, Michelia champaca, Echinocarpus, etc are common.
- * Temperate or Montane zone - It may be further divided into upper and lower zones. Lower temperate zone is the region between 1800 and 5000 metre altitudes. In the lower temperate zone, Quercus, Michelia, Pyrus are common whereas in upper temperate zone conifers and Rhododendrons are common.
- * Alpine Zone - Climate is humid and extremely cold. The vegetation in alpine zone is characterized by complete absence of trees and predominance of shrubs and meadows. Important plants of this zone are Rhododendron and Juniperus.



Gramamma National
Park



Teesta river



Deoaris

DOOARS

Dooars is located in the district of Jalpaiguri bordered by Bhutan in north, Assam in east, Koch Bihar in south and Darjeeling district in west. The tea growing area in Jalpaiguri district is known as Dooars and the plains of Darjeeling district is known as Terai. The Dooars lie between $26^{\circ}16'$ and $27^{\circ}0'$ North latitude and between $88^{\circ}4'$ and $89^{\circ}53'$ East longitude. The Dooars valley stretches over a span of 30 km forming major part of Jalpaiguri district. This region also forms a gateway to hill stations of North Bengal, Sikkim, Bhutan and North-Eastern States. The dense natural forests interwoven with lush green tea gardens are crossed by the rivers like Teesta, Tawraha, Raidak, Kalajani and Bankash and their innumerable tributaries flowing down from the hills.

TOPOGRAPHY AND SOIL : The Dooars is divided into two major zones :-

- (i) the zone of newer alluvium known as Khadar
- (ii) the zone of older alluvium known as Bhangar



The alluvial deposits of the Doab consists of sediment, silt and clay. The bhangar forms the greater part of the region and occupies a level land which is free from river floods, while Khadar occupies the flood plains of the rivers and is always liable to inundation during the rains.

CLIMATE : The climate of Doab region is characterized by a seasonal rhythm, which is produced by the reversal of prevailing winds which takes place twice in a year. In one part of the year when the Northeast monsoon is prevalent, the air is generally cold and dry as compared to the other part. When the Southwest monsoon is prevalent, the circulation of the air in plain is experienced from East to West being moisture laden and brings copious rain.

The climate of the Doab Region is characterized with four distinct seasons:

1. The Cold weather season (December to February)
2. The hot weather season (March to mid-June)
3. The season of rains (Mid-June to September)
4. The season of retreating monsoon (October to November)



Ameca catechu



Tectona grandis



Coffea benghalensis

VEGETATION OF DOODARS REGION

In the lowest slopes and continuing into the plains of Doodars and Terai tropical and sub-tropical mixed forests, ranging from moist deciduous to semi-evergreen forests are found. The sub-Himalayan tract is criss-crossed by a large number of rivers and streams with an alluvial Savannah woodland formation.

SUB-TROPICAL SAL FOREST

Sal or Shorea robusta grows along with Tectona grandis (Teak wood), Schima wallichii, Terminalis chebula, Ptilenia pentagyna, Urightia tomentosa, Pterispermum acrifolium, Craruga pinnata, Ficus religiosa, Dioscorea grandiflora, Premna integrifolia, Strubilus asper, Sterculia villosa, Castanea sativa, Artocarpus hippocastanum, etc.

In such sal forests, Clorodendrum infortunatum, Coffea benghalensis, Leuca species, Eupatorium odoratum, Microstegium ciliatum, Saccharum sp., Imperata cylindrica, Phragmites, etc. are quite conspicuous as ground flora.

Few creepers jungles or Savannah has trees standing sparsely and a mass of creeper chiefly belonging to the family Convolvulaceae apart of Smilax sp. and Mikania cordata.



Piper nigrum

(Plantation amidst tea cultivation)



- Begonia sp.



History of Tea



Camellia sinensis

(Tea cultivation)

Riverain Forests :-

This type of forest line is predominant with Bombax ceiba, Albizia procera, Toona ciliata and Cornelina arbores (Gamman wood).

Tea Cultivation :- (Camellia sinensis)

The topography of Dooars is fit for tea plantation. The entire tea of West Bengal is produced in Northern three districts of Darjeeling, Jalpaiguri and Kochbihar. The Dooars in Jalpaiguri, here tea is raised on slightly elevated areas where suitable slope for proper drainage is available. Shade trees are grown inside the tea gardens which are mostly Albizia lebbek, Cassia siamea, Acacia heterophylla, Sebania paludosa, Melia azadirach, etc. with Piper nigrum (black pepper) climbers growing in their trunks.



Lava Monastery



Bank of Murti River



Rocky Island



Medla Watch Tower

Major Locations Visited : MURTI and LAVA

MURTI : Murli (72 km from Siliguri) is beside Murli river, Malbazar (52 km from Siliguri) the hills and other places around Choksa (61 km from Siliguri). The tea, coffee, rubber and orange plantation are major attraction of the area interspersed with wide flood plains of river tributaries.

LAVA and RISHOP : via Gorubathan; sight seeing : Lava Monastery. Lava is located in Kalimpong district ($27^{\circ}06'N$, $88^{\circ}47'E$), altitude of Lava is 7,700 ft. It's a quaint mountain hamlet with rich thickets of Cypress and Cryptomeria. Rainfall - mid May to mid-October; average annual rainfall is 382 cm.





Tree with epiphytic plants
(ferns and mosses)



Manchantia emarginata



Moss

VEGETATION SEEN DURING VISIT :-

BRYOPHYTES :

Liverworts

1. Marchantia emarginata
 - (i) with gemma cup
 - (ii) with antheridophore
2. Plagiochasma appendiculatum
(with androecia in sessile cushion)

Moss

1. Pogonatum microsporum
2. Aerobryidium filamentosum
3. Funaria hygrometrica
4. Campylopus richardii
5. Bryum sp.





Cyathea spinulosa



Dicranopteris sp.



Oleandra wallichii



Pycnosia sp.

PTERIDOPHYTES :

1. Chromolaena argentea (Silver fern)
2. Cyathea spinulosa (Tree fern)
3. Pleridium aquilinum (Bracken fern)
4. Brickellia gigantea (Huge monospecific stand)
5. Dicranopteris linearis
6. Nephrolepis cordifolia
7. Drynaria quercifolia (Epiphytic)
8. Haplopteris ditkimensis
9. Alcantara wallichii
10. Lycopodiella cornucum
11. Christella dentata
12. Pyrosia sp.



Cryptomeria japonica
(Dhupe)



Bambusa sp.



Juniperus sp.



Camellia sinensis



Cleodendrum infortunatum



Tectona grandis

GYMNOSPERMS :

1. Araucaria sp.
2. Pinus korhugi
3. Cyrtomeria japonica (Dhupi) (majority of forest vegetation)
4. Juniperus sp.
5. Podocarpus sp.

ANGIOSPERMS :

1. Excoelocladia populnea
2. Camellia sinensis (Theaceae)
3. Tectona grandis (Toona) (Verbenaceae)
4. Leucoscepterum conum (Lamiaceae)
5. Clerodendrum inyonifolium (Verbenaceae)
6. Bambusa sp. (Poaceae)



Bergenia sp.



Erigeron karwinskianus



Sarcobus sp.



Anaca catechu



Shorea robusta



Fragaria sp.



Hevea brasiliensis
(Rubber plantation)

7. Rhododendron uigihii (Ericaceae)
8. Shorea robusta (Sal forest) (Dipterocarpaceae)
9. Hevea brasiliensis (Rubber plantation) (Euphorbiaceae)
10. Rubus ellipticus (Rosaceae)
11. Aruca catochu (Palmas)
12. Magnolia sp. (Magnoliaceae)
13. Melia azadirachti (Lythraceae)
14. Bumelia grandiflora (Salonaceae)
15. Bergenia sp. (Saxifragaceae)
16. Fragaria sp. (Rosaceae)
17. Mahonia sp. (Berberidaceae)
18. Erigeron karrinskianus (Asteraceae)
19. Thysanotoma latifolia (Poaceae)
20. Sonchus sp. (Asteraceae)



Plantago ovata



Impatiens sp.



Thyrsanolaena sp.
(Broom grass)



Coffea arabica



Zantedeschia sp.



Hypaestes sp.



Pandanus sp.

21. Plantago ovata (Plantaginaceae)
22. Engelhardia sp. (Juglandaceae)
23. Artemisia sp. (Asteraceae)
24. Melastoma malabathricum (Melastomataceae)
25. Pandanus sp. (Pandanaeaceae)
26. Edgeworthia gardneri (Thymelaeaceae)
27. Hypoestes sp. (Acanthaceae)
28. Morinda sp. (Rubiaceae)
29. Impatiens sp. (Balsaminaceae)
30. Thysanotera sp. (Eriocaulaceae) (Poaceae)
31. Coffea arabica (Rubiaceae)
32. Zantedeschia sp. (Araceae)
33. Duranta grandiflora (Lythraceae)
34. Thysanotera latifolia (Poaceae)

Photo Gallery - Angiosperms



Morinda sp.



Engelhardia sp.



Durabanga grandiflora



Magnolia sp.



Mahonia sp.



Melia azadirach



Quadrat study



Barumana Rastriya Vidyayan



Quadrat study



campfire at hotel premises

Activities during the Excursion

- Sampling of plant community (counting of species and number of individuals) were made from the grassland areas at Gosumara (brown forest) Kasriya village using Quadrat method. We come to know about the frequency, abundance and density of different plant specimens of the area under study.
- Identification of varied topography, vegetation pattern in the foot hills of eastern Himalayan region - the Dobars and at higher altitude of Lava (Katimpong district).
- Identification of floral diversity of the region, collection and preservation of plant specimens that were in flowering or fruiting condition.
- Photographs of different plant specimens, vegetation, phytogeographic regions were taken.
- Sightseeing to Rocky island, basking with marvelous view of tea gardens and forests and scrub jungles crisscrossed by rivers.
- On the last night of our excursion, teachers and students organized a campfire at the hotel premises. We were quite privileged to watch a dance performance organised by the local tribes.



Visit for Quadrat
Study

Handwritten text, possibly a title or heading, written in a cursive script.

Handwritten text, possibly a description or notes, written in a cursive script.

Group photo in front of Brahmara Udyan





Group photograph in front of Murli River



Gymnosperm - on the way to Lava forest



Lava view

could not see any of the forest from here

CONCLUSION

Dooars is a vast stretch of dense forest teeming with wildlife, unending tea gardens, fast flowing rivers, interspersed with local settlements. Flood plain grassland interspersed with marshy and swampy land and even the adjoining riverine forests are the ideal habitat of diverse faunal association. Because of the inter fluvial uplands, rural dwellings are collectively grouped into large compact villages. Physiography of the Dooars region has made agriculture extremely difficult and needs considerable input of human labour. The topography of the Dooars is fit for tea plantation. The land use pattern of this region has also been changing from natural land to man made structure. About 64% of land is under tea cultivation, while forest area covered 25.63 per cent, area under non-agricultural use 10.68 per cent. Besides tea, other major crops of the area are Rice, Maize, Pineapple, Potato, Cardamom, etc. A visit to the greenery of the nature and resting a few days amidst the forests, rivers and wildlife definitely instilled new



CONCLUSION



→ At Samsing (Tea garden)



life and inspiration within us. The excursion has made us aware for the need of conservation and protection of these natural habitats and its rich flora and faunal biodiversity.

MS/1000
31/12/23



SENEVIKA III (MONDAY)
 Attendance of Field Trip 2022
 2.12.2022

classmate

Roll No

	Name of the Student	College Roll no.
12	Rahul Mondol	1141
13	Anushka Dutta	1015
14	Jubira Mukherjee	0990
15	Shreyasi Mukherjee	0297
16	Meelha Mukherjee	0831
17	Payamanti Mukherjee	0549
18	Rangan Mishra	0056
19	Shamrat Patra	1130
20	Pranvratam Ghat	0848
21	Raj Suresh	926
22	Ishita Mondol	0627
23	Soumyadip Sankar	0389
24	Koyel Gayen	0410
25	Lipika Bhowmik	1045
26	Renuka Bharama Bhatnagar	200
27	Riddhi Khatu	546
28	Swastika Ghosh	0417
29	Tanushree Sankar	1171
30	Sucharita Mahanti	0877
31	Abhinava Nandy	0930
32	Hasthijana Panda	0320
33	Rahul Dolai	0630
34	Prithvi Mishra	1071
35	Kousik Roy	0403
36	Amanya Majumdar	0623
37	Sayanika Mondol	259
38	Anwesha Sen	93
39	Aakash Majumdar	0244
40	Saimiti Mishra	0722
41	Rupanjana Gopin	0968
42	Sreemajee Bhattacharyya	0589

Name of the student

College Roll no:

39	Anfreen Sabir	0695
33	Debdulal Harty	0555
34	Somnik Basak	1063
35	Subhayan Ghosh	0687
36	Saptaparna Roy	809
37	Somen Patel	0680
38	Nid Fahad Alam	0492
39	Arshi Mondal	634
40	Ashik Sarker	0663
41	Monalisha Pradhan	879
42	Rima Lama	0253
43	Mafia Mallik	996
44	Anirban Biswas	1123
45	Sanat Soren	49
46.		
47.		
48.		
49.		
50.		

ASUTOSH COLLEGE

(Estd. 1916)

92, S. P. MUKHERJEE ROAD
KOLKATA-700 026



Web : www.asutoshcollege.in
Phone : 2455-4504 / 2486-3912
Fax : (033) 2486-3006
E-mail : mail@asutoshcollege.in

Ref. No. :

Allowed
29/12/2022

Date : 28.12.2022

To
The Vice-Principal
Asutosh College

Respected Sir,

On behalf of the department of History, I would request you to provide the department with the college bus for taking the students of III Semester (H) to the State Archaeological Museum (Behala) on 2.12.2022. The bus would start from college at 10 A.M.

Thank You.

S. Ghosh.

HOD, Department
of History.



पश्चिमबङ्ग पश्चिम बंगाल WEST BENGAL

AP 205899

MEMORANDUM OF UNDERSTANDING
BETWEEN
ASUTOSH COLLEGE, KOLKATA
AND
MAULANA AZAD COLLEGE, KOLKATA

The MOU is entered into on 24th May 2023 by and between Asutosh College, situated at 92, Shyamaprasad Mukherjee Road, Kolkata 700026 and Maulana Azad College situated at 8, Rafi Ahmed Kidwai Rd, Taltala, Kolkata, West Bengal, Kolkata - 700013.

Incumbent 1	Asutosh College	Incumbent 2	Maulana Azad College
Represented by	Dr. Manas Kabi	Represented by	Dr. Subhasis Dutta
Address (Office)	92, Shyamaprasad Mukherjee Road, Kolkata 700026	Address (Office)	8, Rafi Ahmed Kidwai Rd, Taltala, Kolkata, West Bengal, Kolkata - 700013.
Email	mail@asutoshcollege.in	Email	maulanaazadcollegekolkata@gmail.com
Phone number	033-24554504	Phone number	033-29730203

The aforesaid institutions are hereinafter referred to individually as institute and collectively as institutes.



Manas Kabi
PRINCIPAL
ASUTOSH COLLEGE
92, S. P. MUKHERJEE ROAD
KOLKATA-700 026



Subhasis Dutta
Principal
Maulana Azad College
Govt. of West Bengal

ASUTOSH COLLEGE
(Estd. 1916)
92, S.P. Mukherjee Road
Kolkata – 700026



Phone: 2455-4504/ 2486-3912
Fax : (033) 2486-3006
Mail : mail@asutoshcollege.in
Web : www.asutoshcollege.in

- **TITLE OF THE EVENT:** HANDS ON TRAINING ON BIOMEDICAL TECHNIQUES
- **THEME OF THE EVENT/ PROGRAMME:** Add-on course organized by the Department of Zoology, Maulana Azad College, Kolkata - 700013 as part of MOU between Asutosh College and Maulana Azad College
- **ACADEMIC SESSION:** 2022 - 2023
- **DATE:** May, 2023
- **VENUE:** Postgraduate Department of Zoology, Maulana Azad College
- **OBJECTIVE/ PURPOSE:** To provide hands on training on biomedical techniques
- **SPEAKER/S / RESOURCE PERSON/S:** Faculty Members, Postgraduate Department of Zoology, Maulana Azad College
- **TARGET AUDIENCE/ PARTICIPANTS:** Students of Undergraduate and Postgraduate Studies from both Colleges
- **BRIEF REPORT ABOUT THE EVENT/ PROGRAMME:**

DAY 1:

- Welcome address: By Prof. Subir Ch. Dasgupta, HOD, Department of Zoology, Maulana Azad College and Dr. Dipak K. Som, IQAC Co-Ordinator, Maulana Azad College
- Hands on training on “Determination of Some Haematological Parameters” by Dr. Rajarshi Ghosh, Assistant Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

DAY 2:

- Hands on training on “Effect of pH on Enzyme Activity” by Dr. Abhishek Mukherjee, Assistant Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

DAY 3:

- Hands on training on “Mitotic Chromosome Preparation from Bone Marrow of Albino Rat (*Rattus* sp.)” by Dr. Susanta Roy Karmakar, Associate Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

DAY 4:

● Hands on training on “Restriction endonuclease digestion and demonstration” by Dr. Sujit Kumar Bhowal, Associate Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

DAY 5:

● Hands on training on “RNA isolation from animal tissue using Trizol reagent” by Dr. Nabanita Ghosh, Assistant Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

➤ **EXPECTED OUTCOME:** Students have been entrained through this hands-on training so that they can perform these experiments themselves. The knowledge they have gathered in their theoretical classes were demonstrated in front of them for a better understanding.

➤ **PHOTOGRAPHS:**



Manas Kabi

Dr. Manas Kabi
Principal
Asutosh College

PRINCIPAL
ASUTOSH COLLEGE
92, S. P. MUKHERJEE ROAD
KOLKATA-700 026



Maulana Azad College

8, Rafi Ahmed Kidwai Rd, Taltala, Kolkata

West Bengal 700013

(NAAC accredited 'A' grade and DBT Star Status College)



CERTIFICATE OF PARTICIPATION

This is to certify that **Bidisha Roy** of **Asutosh College**, **Kolkata** has actively participated in the **30 Hours Add-on Course** entitled "**HANDS ON TRAINING ON BIOMEDICAL TECHNIQUES**" in the session 2022-2023 organised by **Department of Zoology** in collaboration with IQAC, Maulana Azad College.

Dr. Subhasis Dutta
Principal
Maulana Azad College

Dr. Dipak Kumar Som
Co-ordinator, IQAC
Maulana Azad College

Prof. Subir C. Dasgupta
Head Department of Zoology
Maulana Azad College



पश्चिमबङ्ग पश्चिम बंगाल WEST BENGAL

AN 986389

Memorandum of Understanding (MOU)

THIS AGREEMENT is made on this 24 day of May, 2023

BETWEEN

ASUTOSH COLLEGE, situated at 92, Shyama Prasad Mukherjee Rd,
Kolkata, West Bengal 700026

AND

BIDHAN CHANDRA COLLEGE, situated at
31, G. T. Road (East) Rishra, Serampore, Hooghly - 712248

This Memorandum of Understanding ("MOU") is to promote academic linkages between the two institutions and facilitate their development of collaborative and mutual programmes that will enhance the intellectual life of both institutions, contribute to increased cooperation and promote mutual understanding. Thus, ASUTOSH COLLEGE and BIDHAN CHANDRA COLLEGE, here in after individually referred to as "The Party" and jointly referred to as "The Parties" have agreed to the following:



Kanar Kabir 24/05/23
PRINCIPAL
ASUTOSH COLLEGE
92, S. P. MUKHERJEE ROAD
KOLKATA-700 026

[Signature]
24/05/23
Principal
Bidhan Chandra College
Rishra, Hooghly

ASUTOSH COLLEGE
(Estd. 1916)
92, S.P. Mukherjee Road
Kolkata – 700026



Phone: 2455-4504/ 2486-3912
Fax : (033) 2486-3006
Mail : mail@asutoshcollege.in
Web : www.asutoshcollege.in

➤ **TITLE OF THE PROGRAMME:**

Faculty Exchange Program between Asutosh College and Bidhan Chandra College, Rishra.

➤ **THEME OF THE PROGRAMME:**

Faculty from Dept. of Microbiology, Asutosh College had delivered lecture and taken class to students of Physics Dept., Bidhan Chandra College, Rishra (Inter-Disciplinary Class) as part of MOU between Asutosh College and Bidhan Chandra College, Rishra.

➤ **ACADEMIC SESSION:**

2022 – 2023

➤ **DATE:**

02 June 2023

➤ **VENUE:**

Dept. of Physics, Bidhan Chandra College, 31, GT Road, Rishra, Hooghly, West Bengal Pin-712248

➤ **OBJECTIVE/ PURPOSE:**

To enrich students with knowledge of subjects that is out of their regular disciplines.

➤ **RESOURCE PERSON:**

Dr. Pranab Kumar Das, Assistant Professor, Dept. of Microbiology, Asutosh College.

➤ **TOPIC OF THE CLASS:**

Scope of Career in Pharmaceutical Industry-QC

➤ **COURSE OF THE PROGRAMME:**

This lecture was organized to give an insight to students about the scope of career they may grow in pharmaceutical industries, which is an interdisciplinary lecture too. The lecturer himself had more than 5 years experience in QC department of pharmaceutical industries and he vividly shared his experience with the students.

Firstly; various National and International pharmaceutical companies in India & abroad that offer job to candidates, was introduced to the students. Next, an introduction to Pharmacopoeia was given and the current version of USP, BP, IP was explained deeply. Then the lecture moved towards an inner view of a pharma manufacturing plant in Sikkim where the lecturer had passed major portion of his career life. A video of microbiology laboratory was shared with students and students observed it exuberantly.

Thereafter, various microbiological tests were explained. These tests include – Microbial limit tests as *E coli*, *Salmonella*, *Shigella*, *S aureus*, *Pseudomonas*, *Clostridia*, *Candia albicans* and their growth on corresponding liquid medium and agar plates as well as typical cultural characteristics and biochemical properties were elucidated. Finally, Bacterial Endotoxin Test (BET) and Sterility Test in sterile pharmaceutical formulations as injection and eye drops were explicated in detail.

➤ **EXPECTED OUTCOME:**

This lecture was of enormous help to the students where they got to know about the pharmaceutical sector and different questions they face during interviews. Even though students were from physics background, their scope in such an industry was also explained. There was a brief question-answer session and all doubts were cleared properly.

➤ **PHOTOGRAPHS:**





GPS Map Camera

Hooghly, West Bengal, India

Bidhan Chandra College, 31, Grand Trunk Rd, East, Post, Rishra, West Bengal 712248, India

Lat 22.722422°

Long 88.354674°

02/06/23 03:40 PM GMT +05:30

Google



ASUTOSH COLLEGE

92, S. P. MUKHERJEE ROAD,
KOLKATA - 700026
www.asutoshcollege.in



BIDHAN CHANDRA COLLEGE

31, G. T. Road (East) Rishra
Hooghly - 712248

FACULTY EXCHANGE PROGRAMME, ACADEMIC SESSION 2023-2024

Between ASUTOSH COLLEGE and BIDHAN CHANDRA COLLEGE

Under Memorandum of Understanding (MoU), Dated: 24.05.2023

1.	NAME OF THE FACULTY MEMBER	Dr. Pranab Kumar Das										
2.	NAME OF THE DEPARTMENT	Microbiology										
3.	NAME OF THE COLLEGE OF THE FACULTY MEMBER	Asutosh college										
4.	DATE OF FACULTY EXCHANGE PROGRAMME	02/06/2023										
5.	IS THE LECTURE DISCIPLINE-SPECIFIC OR INTER-DISCIPLINARY OR MULTI-DISCIPLINARY? (Tick the Options)	<table border="1"> <tr><td><input type="checkbox"/></td><td>DISCIPLINE-SPECIFIC</td></tr> <tr><td><input checked="" type="checkbox"/></td><td>INTER-DISCIPLINARY</td></tr> <tr><td><input type="checkbox"/></td><td>MULTI-DISCIPLINARY</td></tr> </table>	<input type="checkbox"/>	DISCIPLINE-SPECIFIC	<input checked="" type="checkbox"/>	INTER-DISCIPLINARY	<input type="checkbox"/>	MULTI-DISCIPLINARY				
<input type="checkbox"/>	DISCIPLINE-SPECIFIC											
<input checked="" type="checkbox"/>	INTER-DISCIPLINARY											
<input type="checkbox"/>	MULTI-DISCIPLINARY											
6.	IF INTER-DISCIPLINARY OR MULTI-DISCIPLINARY MENTION THE NAME(S) OF THE CONCERNED DEPARTMENTS	<table border="1"> <tr><td>1.</td><td>Physicist</td></tr> <tr><td>2.</td><td></td></tr> <tr><td>3.</td><td></td></tr> <tr><td>4.</td><td></td></tr> <tr><td>5.</td><td></td></tr> </table>	1.	Physicist	2.		3.		4.		5.	
1.	Physicist											
2.												
3.												
4.												
5.												
7.	NAME OF THE TOPIC	Scope of career in Pharma Industry - Ge.										
8.	NUMBER OF STUDENTS WHO ATTENDED THE LECTURE	23										
9.	FEEDBACK FROM FACULTY MEMBER ABOUT THE PROGRAMME	The overall outcome of today's Faculty Exchange Programme on the above noted topic (Sl. No. 7) delivered by Dr. Pranab K. Das has been a deep and positive impact on both the visiting faculty member as well as on the students and faculties of the college. The sincere approach of the concerned faculty had inspired the students and faculties to a large extent and it denotes that this sort of collaboration and exchange programme would enrich the teacher and the learner of both the institutions.										



[Signature]

Signature of the Principal of
Bidhan Chandra College
Rishra, Hooghly

[Signature]

Signature of the Faculty Member
participating in the
Faculty Exchange Programme

[Signature]
Co-ordinator

Signature of the IQAC Coordinator/
Bidhan Chandra College
IQAC member of West College

Manababi
PRINCIPAL
ASUTOSH COLLEGE
92, S. P. MUKHERJEE ROAD
KOLKATA-700 026



