

NATIONAL BOARD OF ACCREDITATION

Data Capturing Points of the Program Applied for NBA Accreditation– Tier I/II UG (Engineering) Institute Programs

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Program Name : Biotechnology	Discipline: Engineering & Technology
Level : Under Graduate	Tier: 1
Application No: 12197	Date of Submission: 23-09-2026

PART A- Profile of the Institute

A1.Name of the Institute: University of Engineering and Management, Kolkata	
Year of Establishment : 2015	Location of the Institute: New Town, Kolkata
A2. Institute Address: University of Engineering and Management, Kolkata University Area, Plot No III-B/5, Main Arterial Road, New Town Action Area – III, Kolkata – 700160 PH.	
City:Kolkata	State:West Bengal
Pin Code:700160	Website:https://uem.edu.in/uem-kolkata
Email:vc@uem.edu.in	Phone No(with STD Code):033-23572059
A3. Name and Address of the Affiliating University (if any):	
Name of the University :	City: North 24 Parganas
State : West Bengal	Pin Code: 700160
A4. Type of the Institution: University	
A5. Ownership Status: Self financing	

A6. Details of all Programs being Offered by the Institution:

- No. of UG programs: **15**
- No. of PG programs: **6**

Table No. A6.1: List of all programs offered by the Institute.

Sr.No.	Discipline	Level of program	Name of the program	Year of Start	Year of Closed	Name of The Department
1	Computer Application	UG	BCA	2015	--	Computer Application
2	Computer Application	PG	Master in Computer Applications	2015	--	Computer Application
3	Engineering & Technology	UG	Biotechnology	2015	--	Biotechnology
4	Engineering & Technology	UG	Computer Engineering	2015	--	Computer Engineering
5	Engineering & Technology	PG	Computer Science & Engineering	2015	--	Computer Science and Engineering
6	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence & Machine Learning)	2020	--	Computer Science and Engineering (Artificial Intelligence and Machine Learning)
7	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence and Data Science)	2026	--	Computer Science and Engineering (Artificial Intelligence and Data Science)
8	Engineering & Technology	PG	Computer Science and Engineering (Artificial Intelligence and Machine Learning)	2015	--	Computer Science and Engineering (Artificial Intelligence and Machine Learning)
9	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence)	2023	--	Computer Science and Engineering (Artificial Intelligence)
10	Engineering & Technology	UG	Computer Science and Engineering (Cyber Security)	2024	--	Computer Science and Engineering (Cyber Security)
11	Engineering & Technology	UG	Computer Science and Engineering (Data Science)	2024	--	Computer Science and Engineering (Data Science)

12	Engineering & Technology	UG	Computer Science and Engineering (Internet of Things and Cyber Security including Blockchain Technology)	2020	--	Computer Science and Engineering (Internet of Things and Cyber Security including Blockchain Technology)
13	Engineering & Technology	UG	Computer Science and Engineering (Internet of Things)	2023	--	Computer Science and Engineering (Internet of Things)
14	Engineering & Technology	UG	Electrical Engineering	2019	--	Electrical Engineering
15	Engineering & Technology	UG	Electronics & Communication Engineering	2015	--	Electronics and Communication Engineering
16	Engineering & Technology	PG	Electronics & Communication Engineering	2015	--	Electronics and Communication Engineering
17	Engineering & Technology	UG	Information Technology	2015	--	Information Technology
18	Engineering & Technology	UG	Mechanical Engineering	2018	--	Mechanical Engineering
19	Management	UG	Bachelor of Business Administration	2015	--	Management
20	Management	PG	Master of Business Administration	2015	--	Management
21	Management	PG	MBA (General Management)	2023	--	Management

A7. Programs to be considered for Accreditation vide this Application:

Table No. A7.1: List of programs to be considered for accreditation.

Name of the Department	Having Allied Departments	Name of the Program	Program Level
Biotechnology	No	Biotechnology	UG

Table No. A7.2: Allied Department(s) to the Department of the program considered for accreditation as above.
Cluster ID. Name of the Department (in table no. A7.1) Name of allied Departments/Cluster (for table no. A7.1)

No Record

PART-B: Program information**B1. Provide the Required Information for the Program Applied For:**

Table No. B1: Program details.

A. List of the Programs Offered by the Department:

SR.NO.	PROGRAM NAME	PROGRAM APPLIED LEVEL	YEAR OF START / YEAR OF CLOSED	SANCTIONED INTAKE	INCREASE/DECREASE INTAKE (if any)	YEAR OF INCREASE/DECREASE	CURRENT INTAKE	YEAR OF AICTE APPROVAL	AICTE/COMI AUTHORITY DETAILS
1	Biotechnology	UG	2015 / --	30	No	NA	30	2015	Eastern/1-4621529903

List of the Allied Departments/Cluster and Programs:

B2. Detail of Head of the Department for the program under consideration:

A. Name of the HoD :	Susmita Mukherjee
B. Nature of appointment:	Regular
C. Qualification:	Ph.D

B3. Program Details

Table No.B3.1: Admission details for the program excluding those admitted through multiple entry and exit points.

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2025-26 (CAY)	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)	2021-22 (CAYm4)	2020-21 (CAYm5)	2019-20 (CAYm6)
N=Sanctioned intake of the program (as per AICTE /Competent authority)	30	30	30	30	30	30	30
N1=Total no. of students admitted in the 1st year minus the no. of students, who migrated to other programs/ institutions plus no. of students, who migrated to this program	30	30	18	18	26	30	28
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	0	0	0	0	0	0
N3=Separate division if any	0	0	0	0	0	0	0
N4=Total no. of students admitted in the 1st year via all supernumerary quotas	0	0	0	0	0	0	0
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	30	30	18	18	26	30	28

CAY= Current Academic Year. CAYm1= Current Academic Year Minus 1 CAYm2= Current Academic Year Minus 2. LYG= Last Year Graduate. LYGm1= Last Year Graduate Minus 1. LYGm2= Last Year Graduate Minus 2.

B4. Enrolment Ratio in the First Year

Table No. B4.1: Student enrolment ratio in the 1st year.

Year of entry	N (From Table 4.1)	N1 (From Table 4.1)	N4 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2025-26 (CAY)	30	30	0	100.00
2024-25 (CAYm1)	30	30	0	100.00
2023-24 (CAYm2)	30	18	0	60.00

Average $[(ER1 + ER2 + ER3) / 3] = 86.67 \approx 17.00$

B5. Success Rate of the Students in the Stipulated Period of the Program

Table No.B5.1: The success rate in the stipulated period of a program.

Item	(2021-22) LYG	(2020-21) LYGm1	(2019-20) LYGm2
A*= (No. of students admitted in the 1st year of that batch and those actually admitted in the 2nd year via lateral entry, plus the number of students admitted through multiple entry (if any) and separate division if applicable, minus the number of students who exited through multiple entry (if any).	30.00	30.00	30.00
B=No. of students who graduated from the program in the stipulated course duration	26.00	30.00	28.00
Success Rate (SR)= (B/A) * 100	86.67	100.00	93.33

Average SR of three batches $((SR_1 + SR_2 + SR_3)/3)$: 93.33

B6. Academic Performance of the First-Year Students of the Program

Table No.B6.1: Academic Performance of the First-Year Students of the Program.

Academic Performance	CAYm1(2024-25)	CAYm2(2023-24)	CAYm3 (2022-23)
Mean of CGPA or mean percentage of all successful students(X)	7.83	8.55	8.48
Y=Total no. of successful students	30.00	18.00	18.00
Z=Total no. of students appeared in the examination	30.00	18.00	18.00
API $[X*(Y/Z)]$	7.83	8.55	8.48

Average API $[(AP1+AP2+AP3)/3]$: 8.29

B7: Academic Performance of the Second Year Students of the Program

Table No.B7.1: Academic Performance of the Second Year Students of the Program.

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023-24)	CAYm3 (2022-23)
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X=(Mean of 2nd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2nd year/10)	8.56	8.32	8.60
Y=Total no. of successful students	18.00	18.00	26.00
Z=Total no. of students appeared in the examination	18.00	18.00	26.00
API [X * (Y/Z)]	8.56	8.32	8.60

Average API [(AP1 + AP2 + AP3)/3] : 8.49

B8. Academic Performance of the Third Year Students of the Program

Table No.B8.1: Academic Performance of the Third Year Students of the Program

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023-24)	CAYm3 (2022-23)
X=(Mean of 3rd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 3rd year/10)	8.66	8.27	8.61
Y=Total no. of successful students	18.00	26.00	30.00
Z=Total no. of students appeared in the examination	18.00	26.00	30.00
API [X*(Y/Z)]:	8.66	8.27	8.61

Average API [(AP1 + AP2 + AP3)/3] : 8.51

B9. Placement, Higher Studies, and Entrepreneurship

Table No.B9.1: Placement, higher studies, and entrepreneurship details.

Item	LYG (2021-22)	LYGm1(2020-21)	LYGm2(2019-20)
FS*=Total no. of final year students	30.00	30.00	30.00
X=No. of students placed	2.00	11.00	21.00
Y=No. of students admitted to higher studies	23.00	18.00	7.00
Z= No. of students taking up entrepreneurship	0.00	0.00	1.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	83.33	96.67	96.67

Average Placement Index = (P_1 + P_2 + P_3)/3: 92.22 Placement Index Points:

PART C: Faculty Details in Department and Allied Departments**(Data to be filled in for the Department and Allied Departments)****C1. Faculty details of Department and Allied Departments**

Table No.C1: Faculty details in the Department for the past 3 years including CAY

Sr.No	Name of the Faculty	PAN No.	Highest degree	University	Area of Specialization	Date of Joining in this Institution	Experience in years in current institute	Designation at Time Joining in this Institution	Present Designation	The date on which Designated as Professor/ Associate Professor if any	Nature of Association (Regular/ Contract/ Ad hoc)	Cui As: (Y/I)
1	Susmita Mukherjee	XXXXXXXX73P	Ph.D	IIST Shibpur	Environmental Management and Ecotoxicology	02/05/2016	10.4	Assistant Professor	Professor	01/11/2019	Regular	Yes
2	Sonali Paul	XXXXXXXX37C	Ph.D	Calcutta University	Biochemistry	01/08/2017	9.1	Associate Professor	Professor	01/11/2021	Regular	Yes
3	Moupriya Nag	XXXXXXXX96B	Ph.D	Calcutta University	Biophysics and Microbiology	02/05/2017	9.4	Assistant Professor	Associate Professor	03/10/2023	Regular	Yes
4	Pratik Talukder	XXXXXXXX67H	Ph.D	Calcutta University	Biophysics, Molecular Biology and Bioinformatics	04/05/2018	8.4	Assistant Professor	Associate Professor	01/11/2021	Regular	Yes
5	Dibyajit Lahiri	XXXXXXXX91E	Ph.D	Maulana Abul Kalam Azad University of Technology	Microbial Biotechnology, Alternative Therapeutics	18/07/2017	9.2	Assistant Professor	Associate Professor	03/10/2023	Regular	Yes

6	Keya De Mukhopadhyay	XXXXXXXX51D	Ph.D	Calcutta University	Cancer Biology, Molecular Biology	05/04/2021	5.5	Associate Professor	Professor	01/10/2025	Regular	Yes
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Table No.C2: Faculty details of Allied Departments for the past 3 years including CAY.

C2. Student-Faculty Ratio (SFR)

No. of UG(Engineering) programs in Department including allied departments/ clusters (UGn):

UG1=1st UG program

UGn=nth UG program

B= No. of Students in UG 2nd year (ST)

C= No. of Students in UG 3rd year (ST)

D= No. of Students in UG 4th year (ST)

No. of PG (Engineering) programs in Department including allied departments/ clusters (PGm):

PG1=1st PG program.

PGm=mth PG program

A= No. of Students in PG 1st year

B= No. of Students in PG 2nd year

Student Faculty Ratio (**SFR**) = S/F

S= No. of students of all programs in the Department including all students of allied departments/clusters.

No. of students (ST)=Sanctioned Intake (SA)+ Actual admitted students via lateral entry including leftover seats (L) if any (limited to 10 % of SA)

Students who admitted under supernumerary quotas (SNQ, EWS, etc) will not be considered in calculating SFR value. Those students are exempted.

F=Total no. of regular or contractual faculty members (Full Time) in the Department, including allied departments/clusters (excluding first year faculty (The faculty members who have a 100% teaching load in the first-year courses)).

No. of UG Programs in the Department1 No. of PG Programs in the Department0

Table No.C2.1: Student-faculty ratio.

Description	CAY(2025-26)	CAYm1 (2024-25)	CAYm2 (2023-24)
UG1.B	30	30	30
UG1.C	30	30	30
UG1.D	30	30	30
UG1: Biotechnology	90	90	90
DS=Total no. of students in all UG and PG programs in the Department	90	90	90
AS=Total no. of students of all UG and PG programs in allied departments	0	0	0
S=Total no. of students in the Department (DS) and allied departments (AS)	S1= 90	S2= 90	S3= 90
DF=Total no. of faculty members in the Department	6	6	6
AF= Total no. of faculty members in the allied Departments	0	0	0
F=Total no. of faculty members in the Department (DF) and allied Departments (AF)	F1= 6	F2= 6	F3= 6
FF=The faculty members in F who have a 100% teaching load in the first-year courses	0	0	0
Student Faculty Ratio (SFR)=S/(F-FF)	SFR1= 15.00	SFR2= 15.00	SFR3= 15.00
Average SFR for 3 years	SFR= 15.00		

C3. Faculty Qualification

- Faculty qualification index (FQI) = $2.5 * [(10X + 4Y)/RF]$ where
- X=No. of faculty members with Ph.D. degree or equivalent as per AICTE/UGC norms.
- Y=No. of faculty members with M. Tech. or ME degree or equivalent as per AICTE/ UGC norms.
- RF=No. of required faculty in the Department including allied Departments to adhere to the 20:1 Student-Faculty ratio, with calculations based on both student numbers and faculty requirements as per section C2 of this documents: (RF=S/20).

Table No.C3.1: Faculty qualification.

Year	X	Y	RF	FQ = $2.5 \times [(10X + 4Y) / RF]$
2025-26(CAY)	6	0	4.00	37.50
2024-25(CAYm1)	6	0	4.00	37.50
2023-24(CAYm2)	6	0	4.00	37.50

C4. Faculty Cadre Proportion

- Faculty Cadre Proportion is 1(RF1): 2(RF2): 6(RF3)
- RF1= No. of Professors required = $1/9 * \text{No. of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (S) as per C2 of this documents.}$
- RF2= No. of Associate Professors required = $2/9 * \text{No. of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (S) as per section C2 of this documents.}$
- RF3= No. of Assistant Professors required = $6/9 * \text{No. of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (S) as per section C2 of this documents.}$
- Faculty cadre and qualification and experience should be as per AICTE/UGC norms.

Table No.C4.1: Faculty cadre proportion details.

Year	Professors		Associate Professors		Assistant Professors	
	Required RF1	Available AF1	Required RF2	Available AF1	Required RF3	Available AF3
2025-26	1.00	2.00	1.00	4.00	3.00	0.00
2024-25	1.00	2.00	1.00	4.00	3.00	0.00
2023-24	1.00	2.00	1.00	2.00	3.00	2.00
Average	RF1=1.00	AF1=2.00	RF2=1.00	AF2=3.33	RF2=3.00	AF2=0.67

C5. Visiting/Adjunct Faculty/Professor of Practice

Table No. C5.1: List of visiting/adjunct faculty/professor of practice and their teaching and practical loads.

(CAYm1)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr. Subhalaxmi Ghosh	Visiting Lecturer	Alona Pvt. Ltd.	Biosimilars, Biomaterials Theory and Lab	65.00
2	Dr. Phani Bhusan Ghosh	Visiting Lecturer	Institute of Engineering and Management	Biochemistry, Green Technology and Pollution Abetment, Project I, Project II	53.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr. Phani Bhusan Ghosh	Visiting Lecturer	Institute of Engineering and Management	Biochemistry, Green Technology and Pollution Abetment, Project I, Project II	23.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr. Phani Bhusan Ghosh	Visiting Lecturer	Institute of Engineering and Management	Biochemistry, Green Technology and Pollution Abetment, Project I, Project II	25.00

C6. Academic Research

Table No. C6.1: Faculty publication details.

S.No.	Item	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)
1	No. of peer reviewed journal papers published	33	26	30
2	No. of peer reviewed conference papers published	4	1	0
3	No. of books/book chapters published	14	29	25

C7. Sponsored Research Project

Table No. C7.1: List of sponsored research projects received from external agencies.

(CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Dr. Moupriya Nag		Biotechnology	Theragnostic Paradigm: Adaptive Smart Bandage with Metabolomic Sensing and Precision-Engineered Antibiofilm Nanotherapeutics for Wound Infection Management	DHR	3 Years	48.17
						Amount received (Rs.):48.17

(CAYm2)

(CAYm3)

Total Amount (Lacs) Received for the Past 3 Years: 48.17

Note*:

- Only sponsored research projects will be considered. Infrastructure-based projects will not be considered here.

C8. Consultancy Work

Table No. C8.1: List of consultancy projects received from external agencies.

(CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Dr. Dibyajit Lahiri	Dr. Moupriya Nag	Biotechnology	Antimicrobial Activity of cadambin	NatNov Biosciences Pvt. Ltd.	1 year	8.00
						Amount received (Rs.):8.00

(CAYm2)

(CAYm3)

Total amount (Lacs) received for the past 3 years: 8.00**Note*:**

- Only consultancy projects will be considered. Infrastructure-based projects will not be considered here.

C9. Institution Seed Money or Internal Research Grant to its Faculty for Research Work

Table No. C9.1: List of faculty members received seed money or internal research grant from the Institution.

(CAYm1)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Dr. Susmita Mukherjee	Soil decontamination from microplastics a potential novel biochar formulation	2 years	1.50	1.50	Manuscript published
Dr. Sonali Paul	Effect of bioplastics in modulating plant metabolism	2 years	2.00	2.00	manuscript published
Dr. Dibyajit Lahiri	Site Specific Synthetic Lipase and its Potential Application: Next Gen Editble oil	2 years	2.50	2.50	manuscript published
Dr. Moupriya Nag	Unraveling Bacterial Diseases in Millets From Pathogen Profilling to Effective Manaqement.	2 years	1.50	1.50	Manuscript Published
Dr. Pratik Talukder	Formulation of herbal laxative with enriched antioxidant compounds and anti- diabetic properties	2 years	1.25	1.25	Manuscript submitted, under review
Dr. Susmita Mukherjee	Accumulation of heavy metal in potato (Solanum indicum)	2 years	1.00	1.00	Manuscript communicated
Dr. Dibyajit Lahiri	Production of a sustainable bio-detergent from a newly isolated Bacillus strain	2 years	1.00	1.00	Manuscript Published
Dr. Moupriya Nag	Synergistic impact of green synthesized nanocomposite and conventional antibiotics	2 years	2.50	2.50	Ongoing
Dr. Pratik Talukder	Formulation and development of an ointment from Bacopa	2 years	0.75	0.75	Manuscript submitted, under review
Dr. Pratik Talukder	Formulation of potential hydro ethanolic extracts of Asparagus racemosus	2 years	0.75	0.75	Manuscript submitted, under review
Pratik Talukder	Increase in anticancer bioactive compound - Vinblastine & Vincristine production in Catharanthus	2 years	0.75	0.75	Manuscript Published
			Amount received (Rs.): 15.50		

(CAYm2)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Dr Dibyajit Lahiri	Extracellular Polymeric Substance (EPS) From Lactobacillus SP as Food Supplement for Fishes	2 years	2.00	2.00	Manuscript published
Dr.Moupriya Nag	Bacterial Chitosan as A Novel Wound Dressing Material Having Antibiofilm Properties	2 years	2.00	2.00	Manuscript published
Dr Susmita Mukherjee	Atmospheric Pollutants in Modulating The Bioactive Compounds of Guava (Psidium Guajava) Fruit	2 years	2.00	2.00	Manuscript published
Dr Pratik Talukdar	Formulation Of a Potent Organic Bio-Weedicide from Plant Extract	2 years	1.70	1.70	Manuscript published
			Amount received (Rs.): 7.70		

(CAYm3)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Dr Susmita Mukherjee	To Analyse the Heavy Metal Toxicity on the Bioactive Molecules	2 years	2.00	2.00	Manuscript published
Dr. Susmita Mukherjee	A Fertilizer to Reduce Arsenic Uptake by Paddy Plants	2 years	0.80	0.80	Manuscript published
Dr. Moupriya Nag	Efficacy of Green Synthesized ZnO nanoparticles against dental Biofilm	2 years	1.05	1.05	Manuscript published
			Amount received (Rs.): 3.85		

Total amount (Lacs) received for the past 3 years : 27.05

PART D: Laboratory Infrastructure in the Department

(Data to be filled in for the Department)

D1. Adequate and Well-Equipped Laboratories, and Technical Manpower

Table No.D1.1: List of laboratories and technical manpower.

Sr. No	Name of the Laboratory	Number of students per set up(Batch Size)	Name of the Important Equipment	Weekly utilization status(all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of the Technical staff	Designation	Qualification
1	Biotechnology General Laboratory 1	5	Laminar hood Incubator Autoclave Fermenter UV Spectrophotometer	26 hrs	Ms. Rosalin N	Technical Ass	Post Graduat
2	Biotechnology General Laboratory 2	5	Laminar hood Incubator, Elisa Plate reader, UV-Vis Spectrophotometer	22 hrs	Ms. Rosalin N	Technical Ass	Post Graduat
3	Biotechnology Research Laboratory	5	Gel electrophoresis & Documentation System Spectrophotometer Thermal Cycler	25 hrs	Ms. Rosalin N	Technical Ass	Post Graduat
4	Biotechnology General Laboratory 3	5	Autoclave Centrifuge Laminar hood Sonicator microwave	15 hrs	Ms. Rosalin N	Technical Ass	Post Graduat
5	Biotechnology General Laboratory 4	1	Online servers are used for performing experiments	15 hrs	Kamalika Bhc	Technical Ass	Post Graduat
6	Biotechnology General Laboratory 5	5	Autoclave, Microscopes Laminar hood Plant tissue culture rack	21 hrs	Ms. Rosalin N	Technical Ass	Post Graduat

D2. Safety Measures in Laboratories

Table No. D2.1: List of various safety measures in laboratories.

Sr. No	Laboratory Name	Safety Measures
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1	Biotechnology General Laboratory 1	1. The whole laboratory is air-conditioned to provide a dust-free environment. 2. Pressure gauges of autoclaves are calibrated at the end of every semester. 3. Laminar air flow units are checked and calibrated thoroughly at the end of every semester. 4. All the instruments are provided with standard operating procedures. 5. Sink with soap solution and 70% ethanol is provided in the adjoining laboratories. 6. Separate containers are kept for discarding used biohazard material, broken glassware, and other un-contaminated things. 7. Fumigation is done every month. 8. Proper safety measures like wearing gloves and masks are compulsory.
2	Biotechnology General Laboratory 2	1. The electrical connections are checked thoroughly regularly. 2. Students are encouraged to wash their hands with soap solution and 70% ethanol as a compulsory measure. 3. Separate bins and containers are maintained for discarding the used biohazard material, broken glassware, sharp items and other un-contaminated things. 4. Proper safety measures like wearing gloves and masks are compulsory for handling reagents.
3	Biotechnology Research Laboratory	1. Laminar air flow units are checked and calibrated thoroughly at the end of every semester. 2. Students are encouraged to wash their hands with soap solution and 70% ethanol as a compulsory measure. 3. Separate containers are kept for discarding used biohazard material, broken glassware, sharp items, and other un-contaminated things.
4	Biotechnology General Laboratory 3	1. Gloves and other personal protective equipment are provided to students wherever applicable. 2. Students are encouraged to wash their hands with soap solution and 70% ethanol as a compulsory measure. 3. Separate containers are kept for discarding used biohazard material, broken glassware, sharp items, and other un-contaminated things.
5	Biotechnology General Laboratory 4	1. Electrical connections are routinely checked, and there is a thorough check in the earth connection for electricity. 2. Updated software is used, and routine checking with antivirus software is done regularly. 3. Ergonomic and general safety measures are maintained by providing suitable furniture, adequate lighting and ventilation, and keeping the laboratory clean and free from trip hazards.
6	Biotechnology General Laboratory 5	1. Pressure gauges of autoclaves are calibrated at the end of every semester. 2. Separate containers are kept for discarding used biohazard material, broken glassware, sharp items and other un-contaminated things. 3. Aseptic conditions are maintained by regularly sterilizing the Plant growth rack and workspace thus minimizing contamination during plant tissue culture handling 4. Laminar air flow units are checked and calibrated thoroughly at the end of every

D3. Project Laboratory/Research Laboratory

Table No. 7.5.1: List of project laboratory/research laboratory /Centre of Excellence.

S.N.	Name of the Laboratory
1.	IEDC (Innovation & Entrepreneurship Development Cell) Lab

IEDC (Innovation & Entrepreneur Cell) Lab is a research facility dedicated to innovation-driven research. In this laboratory our departmental UG & PhD students work on different topics like, in fungal biotechnology, plant metabolite extraction and sustainable bioactive product development. The laboratory supports interdisciplinary projects involving the isolation and characterization of bioactive compounds from biological and plant resources, including the utilization of floral biomass and waste materials. Current research activities include extraction and evaluation of phytochemicals, development of herbal products with antifungal potential. The facility also explores the development of eco-friendly biopesticides and bioherbicides from bioactive metabolites and plant-derived compounds for sustainable agricultural applications. The facility provides an enabling platform for faculty-led research, student projects, technology development, innovation, entrepreneurship and translation of laboratory findings into sustainable products and startup-oriented applications.

IEDC Lab of Biotechnology



Inauguration of IEDC Lab of Biotechnology by the second year students. Research scholars and B. Tech Students have exhibited diverse models and products developed by the IED cell. Some of the products include: **Antibacterial Quantum dots & nanoparticles**, **Herbal colours**, **bioplastics**, **herbal sanitisers**, **herbal mosquito repellent**, **zero waste natural detergents**, **microbial rapid detection kit**, **DNA-RNA-carbohydrate detection kit**, **computer simulation based drug discovery**, **Biopigments from bacteria**, **enzyme based detergents**.

Skill Development Training Organized by Department of Biotechnology on Oyster Mushroom Cultivation on 19-03-2026 Turning Spores into a Startup!



The Department of Biotechnology successfully organized a hands-on training session on **Oyster Mushroom (*Pleurotus ostreatus*) Cultivation** for **2nd-year B.Tech students at the IEDC Lab**. This workshop bridges the gap between lab theory and industrial application, focusing on the biology and economic potential of fungi. The session began with Substrate Preparation, spawning and inoculation, Environmental Control, and managing humidity and temperature parameters. This workshop bridges the gap between lab theory and industrial application, focusing on fungi biology and economic potential. The session covered substrate preparation, spawning and inoculation, Environmental Control, and managing humidity and temperature parameters. Students learned about Tips on low-cost laboratory-to-market scaling.



Extraction of Rosemary Oil and Mushroom cultivation at IEDC Lab

List of Grant in Aid projects (leading to product development)

CAY (2025-26)

Sl. No	Title of project	Faculty Involved (PI/Co-PI)	Student involved (mention 2 nd /3 rd /4 th yr)	Amount in Lakhs	Status (ongoing/completed) Patent status- filed/published/granted	PO, PSO, SDG mapped
1.	Increase in anticancer bioactive compound - Vinblastine & Vincristine production in Catharanthus roseus L. by means of CRISPR-cas mediated gene knockout	Dr. Pratik Talukder	4 th year	0.75	Ongoing	PO1, PO2, PO3, PO4, PO12 PSO1 SDG 3; SDG 9; SDG 12
2.	Formulation and development of an ointment from Bacopa monnieri for wound healing .	Dr. Pratik Talukder	4 th year	0.75	Ongoing	PO1, PO2, PO3, PO4, PO10, PO12 PSO1, PSO2 SDG 3; SDG 9; SDG 12
3.	Formulation of herbal laxative with enriched antioxidant compounds and anti- diabetic properties.	Dr. Pratik Talukder	4 th year	1.25	Ongoing	PO1, PO2, PO3, PO4, PO10, PO11, PSO1 SDG 3; SDG 12; SDG 9
4.	Formulation of potential of hydroethanolic extracts of Asparagus racemosus as an effective physiologically viable strategy	Dr. Pratik Talukder	4 th year	0.9	Ongoing	PO1, PO2, PO3, PO4, PSO1, SDG 3; SDG 9; SDG 12
5	Upscaling of Lab-Grown Mushroom Cultivation: Oyster, Shiitake and Medicinal Mushroom Production Using Fabricated Hanging Systems	Dr. Dibyajit Lahiri, Dr. Moupriya Nag	4 th Yr	0.5	Ongoing	PO1, PO2, PO3, PO4, PO10, PO11, PO12 PSO3 SDG2, SDG3, SDG 8, SDG8, SDG11, SDG12
6	Upscaling of Lab-Grown Oyster mushroom Cultivation Using Fabricated Vertical Hanging Systems	Dr. Dibyajit Lahiri, Dr. Moupriya Nag	4 th Yr	0.3	Ongoing	PO1, PO2, PO3, PO4, PO10, PO11, PO12 PSO3 SDG2, SDG3, SDG 8, SDG8, SDG11, SDG12

7	Synergistic antibiofilm strategies using standardized rosmarinus (Salvia rosmarinus) bioactives, antimicrobial peptides, and green silver nanoparticles against MDR pathogens.	Dr. Dibyajit Lahiri, Dr. Moupriya Nag	4 th Yr	0.5	Ongoing	PO1, PO2, PO3, PO4, PO9, PO10 PSO1 SDG3, SDG6, SDG9, SDG12
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PART E: First Year faculty and financial Resources

(Data to be filled in for the first year course faculty and budget allocation and utilization)

E1. First Year Student-Faculty Ratio (FYSFR)

Table No. E1.1: FYSFR details.

Year	Sanctioned intake of all UG programs (S4)	No. of required faculty (RF4= S4/20)	No. of faculty members in Basic Science Courses & Humanities and Social Sciences including Management courses (NS1)	No. of faculty members in Engineering Science Courses (NS2)	Percentage= No. of faculty members $((NS1*0.8) + (NS2*0.2))/(No. of required faculty (RF4))$; Percentage= $((NS1*0.8) + (NS2*0.2))/RF$
2023-24(CAYm2)	2124	106	114	27	91
2024-25(CAYm1)	2634	132	117	27	75
2025-26(CAY)	2934	147	128	30	74

E2. Budget Allocation, Utilization, and Public Accounting at Institute Level

Table No. E2.1: Budget and actual expenditure incurred at Institute level.

Items	Budgeted in 2025-26	Actual Expenses in 2025-26 till	Budgeted in 2024-25	Actual Expenses in 2024-25 till	Budgeted in 2023-24	Actual Expenses in 2023-24 till	Budgeted in 2022-23	Actual Expenses in 2022-23 till
Infrastructure Built-Up	8000000	780589968	3800000	3795618	1900000	1862155	3200000	3114334
Library	13200000	13106011	4700000	4611110	7600000	7513172	18700000	18695087
Laboratory equipment	1300000	120413864	1000000	1002449	8000000	7844219	9500000	8790021
Teaching and non-teaching staff	6900000	6836062	600000	5718657	3800000	3734579	6000000	5845752
Outreach Programs	1450000	1429075	1150000	1122812	3350000	3308694	535000	533145
R&D	2500000	2271627	3000000	2865823	3000000	2900788	1175000	1172708
Training, Placement and	1250000	1219879	3400000	3390090	7910000	7913601	3520000	3526227
SDGs	8700000	8665446	320000	315515	900000	860800	3650000	3613894
Entrepreneurship	230000	221745	200000	191219	150000	145619	125000	120394
Others, specify	1200000000	1192757781	960000000	955078347	960000000	958560903	830000000	823095962
Total	1243530000	2127511458	978170000	978091640	996610000	994644530	876405000	868507524

E3. Budget Allocation, Utilization, and Public Accounting at Program Specific Level

Table No. E3.1: Budget and actual expenditure incurred at program level.

Items	Budgeted in 2025-26	Actual Expenses in 2025-26 till	Budgeted in 2024-25	Actual Expenses in 2024-25 till	Budgeted in 2023-24	Actual Expenses in 2023-24 till	Budgeted in 2022-23	Actual Expenses in 2022-23 till
Laboratory equipment	2200000	2199513	1800000	1782224	1600000	1550000	1250000	1223000
Software	50000	48932	40000	38923	35000	33000	30000	27000
SDGs	17000	16624	15000	14208	11000	11000	9000	9000
Support for faculty development	15000	14812	12000	11318	9000	9000	7000	7000
R & D	70000	69343	50000	48756	8000	8000	7000	7000
Industrial Training, Industry expert,	15000	13857	10000	9527	7000	7000	6000	6000
Miscellaneous Expenses*	153000	152339	123000	121637	35000	34000	32000	31000
Total	2520000	2515420	2050000	2026593	1705000	1652000	1341000	1310000