NATIONAL BOARD OF ACCREDITATION

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

Program Name : Chemical Engineering	**Discipline**: Engineering & Technology
Level : Under Graduate	**Tier**: 1
Application No: 10755	**Date of Submission**: 25-06-2025

PART A- Profile of the Institute

A1.Name of the Institute: HERITAGE INSTITUTE OF TECHNOLOGY	
Year of Establishment : 2001	Location of the Institute: NEAR RUBY HOSPITAL ON EMBYEPASS
A2. Institute Address:CHOWBAGA ROAD,ANANDAPUR P.O.-EAST KOLKATA TOWNSHIP	
City:Kolkata	State:West Bengal
Pin Code:700107	Website:WWW.HERITAGEIT.EDU
Email:ADMIN@HERITAGEIT.EDU	Phone No(with STD Code):033-66270614
A3. Name and Address of the Affiliating University (if any):	
Name of the University : Maulana Abul Kalam Azad University of Technology,	City: Nadia
State : West Bengal	Pin Code: 741249
A4. Type of the Institution: Deemed University	
A5. Ownership Status: Self financing	

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

- No. of UG programs: **13**
- No. of PG programs: **7**

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	PG	Master in Computer Applications	2003	--	Computer Application
2	Engineering & Technology	PG	Applied Electronics & Instrumentation Engineering	2006	--	Applied Electronics and Instrumentation Engineering
3	Engineering & Technology	UG	Applied Electronics & Instrumentation Engineering	2001	--	Applied Electronics and Instrumentation Engineering
4	Engineering & Technology	UG	Biotechnology	2002	--	Biotechnology
5	Engineering & Technology	PG	Biotechnology	2007	--	Biotechnology
6	Engineering & Technology	UG	Chemical Engineering	2002	--	Chemical Engineering
7	Engineering & Technology	UG	Civil Engineering	2011	--	Civil Engineering
8	Engineering & Technology	UG	Computer Science and Business System	2020	--	Computer Science and Business System
9	Engineering & Technology	UG	Computer Science and Engineering	2001	--	Computer Science and Engineering
10	Engineering & Technology	PG	Computer Science and Engineering	2006	--	Computer Science and Engineering

11	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence & Machine Learning)	2021	--	Computer Science and Engineering (Artificial Intelligence and Machine Learning)
12	Engineering & Technology	UG	Computer Science and Engineering (Data Science)	2021	--	Computer Science and Engineering (Data Science)
13	Engineering & Technology	UG	Computer Science and Engineering (Internet of Things and Cyber Security including Blockchain Technology)	2022	--	Computer Science and Engineering (Internet of Things and Cyber Security including Blockchain Technology)
14	Engineering & Technology	UG	Electrical Engineering	2012	--	Electrical Engineering
15	Engineering & Technology	UG	Electronics & Communication Engineering	2001	--	Electronics and Communication Engineering
16	Engineering & Technology	PG	Electronics & Communication Engineering	2009	--	Electronics and Communication Engineering
17	Engineering & Technology	UG	Information Technology	2001	--	Information Technology
18	Engineering & Technology	UG	Mechanical Engineering	2011	--	Mechanical Engineering
19	Engineering & Technology	PG	Renewable Energy	2016	--	Chemical Engineering
20	Engineering & Technology	PG	VLSI	2011	--	Electronics and Communication Engineering

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
Electronics and Communication Engineering	Yes	Electronics & Communication Engineering	UG
Applied Electronics and Instrumentation Engineering	Yes	Applied Electronics & Instrumentation Engineering	UG
Biotechnology	No	Biotechnology	UG
Chemical Engineering	No	Chemical Engineering	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/COMPETENT AUTHORITY ARROVAL DETAILS	ACCREDITATION STATUS	FROM	TO	NO. OF TIMES PROGRAM ACCREDITED
1	Chemical Engineering	UG	2002 / --	60	No	NA	60	2002	F.No 750-80-008(NDEG)/ET/2001	Granted accreditation for 3 years for the period (specify period)	2022	2025	4

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 :	Sulagna Chatterjee
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)	2024-25 (CAY)	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)	2020-21 (CAYm4)	2019-20 (CAYm5)	2018-19 (CAYm6)
N=Sanctioned intake of the program (as per AICTE /Competent authority)	60	60	60	60	60	60	60
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	52	46	30	39	40	45	49
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	5	7	9	11	6	13
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	4	3	3	2	1	3	2
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	56	54	40	50	52	54	64

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]
2024-25 (CAY)	60	52	4	93.33

2023-24 (CAYm1)	60	46	3	81.67
2022-23 (CAYm2)	60	30	3	55.00

Average [(ER1 + ER2 + ER3) / 3] = 76.67≡ 14.00

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	(2020-21) LYG	(2019-20) LYGm1	(2018-19) 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).	71.00	66.00	73.00
B=No. of students who graduated from the program in the stipulated course duration	50.00	51.00	62.00
Success Rate (SR)= (B/A) * 100	70.42	77.27	84.93

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 77.54

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(2023-24)	CAYm2(2022-23)	CAYm3 (2021-22)
X=(Mean of 1st 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 1st year/10)	7.67	7.14	7.96
Y=Total no. of successful students	54.00	33.00	43.00
Z=Total no. of students appeared in the examination	54.00	33.00	43.00
API [X*(Y/Z)]	7.67	7.14	7.96

Average API[(AP1+AP2+AP3)/3] : 7.59

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 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
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 2rd year/10)	7.83	7.11	7.64
Y=Total no. of successful students	40.00	50.00	52.00
Z=Total no. of students appeared in the examination	40.00	52.00	62.00
API [X * (Y/Z)]	7.82	6.84	6.41

Average API [(AP1 + AP2 + AP3)/3] : 7.02

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 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
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)	8.38	7.53	7.71
Y=Total no. of successful students	50.00	51.00	51.00
Z=Total no. of students appeared in the examination	50.00	52.00	54.00
API [X*(Y/Z)]:	8.38	7.39	7.28

Average API [(AP1 + AP2 + AP3)/3] : 7.68

B9. Placement, Higher Studies, and Entrepreneurship

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

Item	LYG (2020-21)	LYGm1(2019-20)	LYGm2(2018-19)
FS*=Total no. of final year students	71.00	66.00	73.00
X=No. of students placed	34.00	34.00	43.00
Y=No. of students admitted to higher studies	5.00	6.00	6.00
Z= No. of students taking up entrepreneurship	0.00	1.00	0.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	54.93	62.12	67.12

Average Placement Index = (P_1 + P_2 + P_3)/3: 61.39 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)	Currently Associated (Y/N)	In case of NO, Date of Leaving	IS HOD?
1	Pinaki Bhattacharya	XXXXXXX93K	Ph.D	Jadavpur University	Chemical Reaction Engineering, Bioprocess Engineering	01/03/2011	14.3	Professor	Professor	01/03/2011	Regular	Yes		No
2	Sulagna Chatterjee	XXXXXXX79D	Ph.D	University of Texas at Austin	Microfluidics CFD and Advanced Oxidation Process	01/08/2011	13.10	Professor	Professor	01/08/2011	Regular	Yes		Yes
3	Diptendu Datta	XXXXXXX79M	Ph.D	Jadavpur University	Membrane Separation Process	19/07/2004	20.10	Lecturer	Associate Professor	01/06/2021	Regular	Yes		No
4	Avijit Ghosh	XXXXXXX40N	Ph.D	IIT Guwahati	Fuel Cells, Hydrogen Energy, Electrocatalyst	17/02/2016	9.3	Assistant Professor	Assistant Professor		Regular	Yes		No
5	Dwaipayan Sen	XXXXXXX07R	Ph.D	Jadavpur University	Membrane Separation, Bioremediation	01/07/2015	9.11	Assistant Professor	Assistant Professor		Regular	Yes		No

6	Abhyuday Mallick	XXXXXXX22B	Ph.D	University of Calcutta	Petroleum Refinery Engineering and Petrochemicals, CFD	18/01/2011	14.4	Assistant Professor	Assistant Professor		Regular	Yes		No
7	Swami Vedajnananda	XXXXXXX49R	Ph.D	Jadavpur University	Chemical Reaction Engineering, Bioprocess Engineering	01/01/2002	23.5	Lecturer	Professor	01/07/2009	Regular	Yes		No
8	Sangita Bhattacharjee	XXXXXXX17J	Ph.D	Jadavpur University	Membrane Separation Process	31/08/2007	17.9	Lecturer	Assistant Professor		Regular	Yes		No
9	Aparna Ray Sarkar	XXXXXXX23C	Ph.D	Jadavpur University	Energy, Pyrolysis, Solid Waste	05/01/2016	9.4	Assistant Professor	Assistant Professor		Regular	Yes		No
10	Pramita Sen	XXXXXXX93R	Ph.D	Jadavpur University	Membrane Separation, Mass Transfer	02/01/2010	15.5	Lecturer	Assistant Professor		Regular	Yes		No

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 Department1
Table No.C2.1: Student-faculty ratio.

Description	**CAY(2024-25)**	**CAYm1 (2023-24)**	**CAYm2 (2022-23)**
UG1.B	65	66	66
UG1.C	66	66	66
UG1.D	66	66	66
UG1: Chemical Engineering	**197**	**198**	**198**
PG1.A	9	9	9

Description	CAY(2024-25)	CAYm1 (2023-24)	CAYm2 (2022-23)
PG1.B	9	9	18
PG1: Renewable Energy	**18**	**18**	**27**
DS=Total no. of students in all UG and PG programs in the Department	215	216	225
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=** 215	**S2=** 216	**S3=** 225
DF=Total no. of faculty members in the Department	10	10	10
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=** 10	**F2=** 10	**F3=** 10
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= 21.50**	**SFR2= 21.60**	**SFR3= 22.50**
Average SFR for 3 years	**SFR= 21.87**		

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 x [(10X + 4Y) / RF)]
2024-25(CAY)	10	0	10.00	25.00
2023-24(CAYm1)	10	0	10.00	25.00
2022-23(CAYm2)	10	0	11.00	22.73

C4. Faculty Cadre Proportion

- Faculty Cadre Proportion is 1(RF1): 2(RF2): 6(RF3)
- RF1= No. of Professors required = 1/9 * 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 * 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 * 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
2024-25	1.00	3.00	2.00	1.00	7.00	6.00
2023-24	1.00	3.00	2.00	1.00	7.00	6.00
2022-23	1.00	3.00	2.00	1.00	7.00	6.00

Average	RF1=1.00	AF1=3.00	RF2=2.00	AF2=1.00	RF2=7.00	AF2=6.00

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	Pinaki Bhattacharya	Emeritus Professor	NA	Basics of Material & Energy Balance, Thermodynamics II, Process Integration	58.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Pinaki Bhattacharya	Emeritus Professor	NA	Chemical Reaction Engineering II, Bioprocess Engineering, Industrial Safety and Hazard Analysis	84.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Pinaki Bhattacharya	Emeritus Professor	NA	Thermodynamics I, Chemical Reaction Engineering I, Heat Transfer, Thermodynamics II, Process Integra	168.00

C6. Academic Research

Table No. C6.1: Faculty publication details.

S.No.	Item	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)
1	No. of peer reviewed journal papers published	16	8	5
2	No. of peer reviewed conference papers published	5	3	5
3	No. of books/book chapters published	13	4	3

C7. Sponsored Research Project

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

(CAYm1)

(CAYm2)

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. Dwaipayan Sen	Dr. Sulagna Chatterjee, Mr. Subrata Mukherjee	Chemical Engineering	Development of portable Solar Stove with energy storage facility	InSIC (International Solar Innovation Council), Finland	1.5 years	4.32
						Amount received (Rs.):4.32

(CAYm3)

Total Amount (Lacs) Received for the Past 3 Years: 4.32

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)

(CAYm2)

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. Abhyuday Mallick	NA	Chemical Engineering	Development of a Set-up using a QCM sensor for detection of gaseous molecules	Ashca Technologies Pvt Ltd	2022-ongoing	0.58
						Amount received (Rs.):0.58

(CAYm3)

Total amount (Lacs) received for the past 3 years: 0.58

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)

(CAYm2)

(CAYm3)

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

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	Instrumentation & Process Control Laboratory	5	1. Liquid level Measurement by Air Purge Method 2. Control Valves 3. PID Controller 4. Time Constant of Thermocouple & Thermometer 5. First Order	4 hours	Manjur Rahman	Technical Assistant	M.Tech
2	Particle & Fluid Particle Processing Laboratory	5	1. Rod Mill 2. Ball Mill 3. Hammer Mill 4. Jaw Crusher 5. Rotary Sieve Shaker 6. Gyratory Sieve Shaker 7. Plate and Frame Filter Press 8. Cyclone	10 hours	Manjur Rahman	Technical Assistant	M.Tech

3	Heat Transfer Laboratory	7	1. PARALLEL / COUNTER FLOW HEAT EXCHANGER, 2. HEAT TRANSFER THROUGH	6 hours	Subrata Mukherjee	Senior Technical Assista	M.Tech
4	Chemical Reaction Engineering Laboratory	7	1. Isothermal CSTR 2. Packed Bed Reactor 3. Plug Flow Reactor 4. Isothermal Semi-Batch Reactor 5.	6 hours	Saswati Bhattacharya	Technical Assistant	D.ChE
5	Energy Laboratory	5	1. Pensky Martens Apparatus, 2. Abel Apparatus, 3. Red Wood Viscometer, 4. Hot Air Oven, 5.	15 hours	Sudipta Shit	Senior Technical Assista	D.ME
6	Process Equipment Design & Drawing Laboratory	1	40 nos Desktop Computers	18-28 hours	Sudipta Shit	Senior Technical Assista	D.ME
7	Alternative Energy Laboratory	5	1. V-I curve Tracer, 2. Solar cell Unit(series and parallel connection), 3. solar energy trainer, 4. solar	3 hours	Subrata Mukherjee	Senior Technical Assista	M.Tech
8	Mass Transfer Laboratory	5	1. Batch distillation Setup, 2. Absorption in packed bed coloum, 3. Absorption in wetted wall coloum, 4.	6 hours	Shyamasree Das	Technical Assistant	D.ChE
9	Fluid Mechanics laboratory	5	1. Centrifugal Pump Test rig, 2. Reynolds Apparatus, 3. Orificmeter, 4. Venturimeter, 5. Pitot	12 hours	Selina Begam	Technical Assistant	D.ChE
10	Instrumental Methods Laboratory	5	1. Nephelometric Turbiditymeter 2. Photo-eletric colorimeter with 8 filters 3. Refracto-Meter 4.	6 hours	Selina Begam	Technical Assistant	D.ChE
11	Precision Instruments Laboratory	5	1. Gas Chromatography 2. Spectrophotometer (Cary 60) 3. Spectrophotometer (Genesys thermo	14-18 hours	Manasi Ghosh	Technical Assistant	B.Tech

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	Process Equipment Design and Drawing Laboratory	1. One fire extinguisher is installed by the side of the laboratory for any fire because electrical failures. 2. In order to avoid overloading MCB is locally installed.
2	Particle & Fluid Particle Processing Laboratory	1. Adequate space is maintained between the machineries to avoid any accident during laboratory work. 2. Machines are installed on the platform to avoid shock on the floor which may damage the building structure. 3. In order to avoid overloading MCB is locally installed
3	Mass Transfer Laboratory	1. Fire extinguisher is properly installed by the side of the laboratory for any fire because of electrical failures. 2. To avoid over loading MCB is Locally installed. 3. Equipment like compressors are covered by shrouds.
4	Fluid Mechanics Laboratory	1. Fire extinguisher is properly installed by the side of the laboratory for any fire because of electrical failures. 2. To avoid over loading MCB is Locally installed.

5	Energy Laboratory	1. Fire extinguisher is installed by the side of the laboratory for any fire because of electrical failures, or due to the uses of oil and chemical during experiment. 2. In order to avoid overloading MCB is locally installed. 3. Five pairs of asbestos hand gloves are kept in the lab to handle any high temperature material
6	Chemical Reaction Engineering Laboratory	1. One fire extinguisher is installed by the side of the laboratory for any fire because of electrical failures. 2. Adequate space is maintained between the machineries to avoid any accident during laboratory work. 3. In order to avoid overloading MCB is locally installed. 4. Equipment like compressors are covered by shrouds.
7	Project Laboratory	1. Adequate space is maintained between the machineries to avoid any accident during laboratory work. 2. In order to avoid overloading MCB is locally installed. 3. One fire extinguisher is installed by the side of the laboratory for any fire because of electrical failures. 4. Fume hood is kept in the lab to ensure ventilation of high volatile components.
8	Heat Transfer Laboratory	1. One fire extinguisher is installed by the side of the laboratory for any fire because of electrical failures. 2. Adequate space is maintained between the machineries to avoid any accident during laboratory work. 3. Machines are installed on the platform.
9	Alternative Energy Laboratory	1. Adequate space is maintained between the machineries to avoid any accident during laboratory work. 2. In order to avoid overloading MCB is locally installed. 3. Adequate space is maintained between the machineries to avoid any accident during laboratory work. 4. One fire extinguisher is installed by the side of the laboratory for any fire because of electrical failures.
10	Precision Instruments Laboratory	1. Fire extinguisher is installed by the side of the laboratory for any fire because of electrical failures, due to oil and chemical. 2. In order to avoid overloading MCB is locally installed.
11	Instrumental Methods Laboratory	1. Fire extinguisher is installed by the side of the laboratory for any fire because of electrical failures, due to oil and chemical. 2. In order to avoid overloading MCB is locally installed.

D3. Project Laboratory/Research Laboratory

There is a dedicated project laboratory for facilitating UG research projects. The UG instructional laboratories are also used for supporting projects for Idea Lab and individual faculty researach as and when necessary. The M Tech program in the department has a dedicated research laboratory, namely the Alternative Energy laboratory.The dedicated UG project laboratory is equipped with the following equipment:

Vacuum drying Oven

Centrifuge

Fume Cupboard

Pyrolyser

Fermenter

Mechanical Shaker

pH Meter

Weighing Balance-----1 No.

Vacuum Pump

Magnetic Stirrer/ Heating Mantle-----5 Numbers

Reflux Condenser (2ft)

Ultrasonic bath

Water Bath(with temperature control)

Ultra sound enhanced Photo Catalytic Reactor

RK make 30 Ton Manual Hand Operated Hydraulic press

Peristaltic pump with membrane module

Remi Research Centrifuge

Autoclave (in Alternative Energy lab)

Jar Test apparatus (n Alternative Energy lab)

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
2022-23(CAYm2)	1020	51	42	67	92

2023-24(CAYm1)	1020	51	42	68	93
2024-25(CAY)	1020	51	40	68	89

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 2024-2025	Actual Expenses in 2024-2025 till	Budgeted in 2023-2024	Actual Expenses in 2023-2024 till	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till
Infrastructure Built-Up	0	0	0	0	0	0	0	0
Library	2000000	1527000	2000000	1286000	4500000	1523000	1500000	1715000
Laboratory equipment	13500000	14931000	13500000	10552000	5000000	11811000	2500000	3539000
Teaching and non-teaching staff salary	391800000	378009000	372500000	362743000	370500000	346368000	338000000	337655000
Outreach Programs	500000	594000	500000	642000	500000	812000	500000	495000
R&D	6000000	5404000	6000000	5372000	5000000	5578000	5000000	4252000
Training, Placement and Industry linkage	4700000	4258000	4500000	4013000	1700000	1096000	500000	400000
SDGs	500000	364000	700000	650000	400000	335000	200000	239000
Entrepreneurship	700000	666000	500000	504000	0	0	0	0
Others, specify	114300000	101513000	100000000	106463000	97100000	92409000	79300000	70632000
Total	**534000000**	**507266000**	**500200000**	**492225000**	**484700000**	**459932000**	**427500000**	**418927000**

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 2024-2025	Actual Expenses in 2024-2025 till	Budgeted in 2023-2024	Actual Expenses in 2023-2024 till	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till
Laboratory equipment	500000	589000	100000	44000	200000	66000	100000	90000
Software	200000	177000	100000	51000	100000	47000	100000	138000
SDGs	50000	17000	50000	31000	50000	18000	50000	13000
Support for faculty development	250000	268000	50000	34000	150000	98000	50000	0

R & D	200000	252000	200000	234000	500000	260000	100000	31000
Industrial Training, Industry expert, Internship	200000	168000	100000	113000	100000	101000	100000	16000
Miscellaneous	500000	331000	500000	379000	500000	368000	500000	395000
Total	**1900000**	**1802000**	**1100000**	**886000**	**1600000**	**958000**	**1000000**	**683000**