NATIONAL BOARD OF ACCREDITATION

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

Program Name : Electronics & Communication Engineering	**Discipline**: Engineering & Technology
Level : Under Graduate	**Tier**: 1
Application No: 11776	**Date of Submission**: 06-05-2026

PART A- Profile of the Institute

A1.Name of the Institute: GURU NANAK INSTITUTE OF TECHNOLOGY	
Year of Establishment : 2003	Location of the Institute: located in Panihati West Bengal India
A2. Institute Address:157/F,NILGUNJ ROAD,PANIHATI,SODEPUR,KOLKATA-700114	
City:KOLKATA	State:West Bengal
Pin Code:700114	Website:www.gnit.ac.in
Email:PRINICIPAL_GNIT@JISGROUP.ORG	Phone No(with STD Code):033-25233900
A3. Name and Address of the Affiliating University (if any):	
Name of the University : WEST BENGAL UNIVERSITY OF TECHNOLOGY (W.B.U.T.)	City: North 24 Parganas
State : West Bengal	Pin Code: 700114
A4. Type of the Institution: Self-Supported Institute	
A5. Ownership Status: Self financing	

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

- No. of UG programs: **8**
- No. of PG programs: **4**

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	Engineering & Technology	UG	Computer Science and Engineering	2003	--	Computer Science and Engineering
2	Engineering & Technology	PG	Computer Science and Engineering	2009	--	Computer Science and Engineering
3	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence & Machine Learning)	2024	--	Computer Science and Engineering (Artificial Intelligence and Machine Learning)
4	Engineering & Technology	UG	Computer Science and Engineering (Cyber Security)	2024	--	Computer Science and Engineering (Cyber Security)
5	Engineering & Technology	UG	Electrical Engineering	2003	--	Electrical Engineering
6	Engineering & Technology	Diploma	Electrical Engineering	2015	--	Electrical Engineering
7	Engineering & Technology	PG	Electronics & Communication Engineering	2008	--	Electronics and Communication Engineering

8	Engineering & Technology	UG	Electronics & Communication Engineering	2003	--	Electronics and Communication Engineering
9	Engineering & Technology	UG	Electronics and Computer Science	2021	--	Electronics and Computer Science
10	Engineering & Technology	Diploma	Electronics and Telecommunication Engineering	2015	--	Electronics and Communication Engineering
11	Engineering & Technology	UG	Food Technology	2006	--	Food Technology
12	Engineering & Technology	PG	Food Technology	2024	--	Food Technology
13	Engineering & Technology	UG	Information Technology	2007	--	Information Technology
14	Engineering & Technology	PG	Masters in Computer Applications	2007	--	Computer Applications

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
Computer Science and Engineering	Yes	Computer Science and Engineering	UG
Electrical Engineering	No	Electrical Engineering	UG
Electronics and Communication Engineering	No	Electronics & Communication 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	PROGRAM DURATION
1	Electronics & Communication Engineering	UG	2003 / --	60	Yes	2011	120	2011	F. No- Eastern/1-403195292 /2011/EOA dated-05.09.2011	Granted accreditation for 3 years for the period (specify period)	2023	2026	4	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 :	Dr. Avali Banerjee
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)	120	120	120	120	120	120	120
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	120	120	120	120	120	120	120
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	10	12	10	11	10	10
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.	120	130	132	130	131	130	130

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)	120	120	0	100.00
2024-25 (CAYm1)	120	120	0	100.00
2023-24 (CAYm2)	120	120	0	100.00

Average [(ER1 + ER2 + ER3) / 3] = 100.00≡ 20.00

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).	131.00	130.00	130.00
B=No. of students who graduated from the program in the stipulated course duration	131.00	130.00	130.00
Success Rate (SR)= (B/A) * 100	100.00	100.00	100.00

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 100.00

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)	8.73	8.71	8.70
Y=Total no. of successful students	120.00	120.00	120.00
Z=Total no. of students appeared in the examination	120.00	120.00	120.00
API [X*(Y/Z)]	8.72	8.71	8.70

Average API[(AP1+AP2+AP3)/3] : 8.71

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)
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)	8.74	8.72	8.46
Y=Total no. of successful students	132.00	130.00	131.00
Z=Total no. of students appeared in the examination	132.00	130.00	131.00
API [X * (Y/Z)]	8.74	8.72	8.46

Average API [(AP1 + AP2 + AP3)/3] : 8.64

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)	8.75	8.64	8.40
Y=Total no. of successful students	130.00	131.00	130.00
Z=Total no. of students appeared in the examination	130.00	131.00	130.00

Average API [(AP1 + AP2 + AP3)/3] : 8.54

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	131.00	130.00	130.00
X=No. of students placed	120.00	119.00	118.00
Y=No. of students admitted to higher studies	10.00	10.00	11.00
Z= No. of students taking up entrepreneurship	1.00	1.00	1.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	100.00	100.00	100.00

Average Placement Index = (P_1 + P_2 + P_3)/3: 100.00 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	Dr. Suparna Biswas	XXXXXXX33D	Ph.D	IIEST, Shibpur	Image Processing and AI/ML	01/09/2011	14.7	Assistant Professor	Professor	01/07/2024	Regular	Yes		No
2	Dr. Avali Banerjee	XXXXXXX21C	Ph.D	MAKAUT	Microwave & Antenna	28/06/2011	14.10	Assistant Professor	Professor	01/07/2025	Regular	Yes		Yes
3	Dr. Kaushik Roy	XXXXXXX02H	Ph.D	Jadavpur University	VLSI & Nanotechnology	01/03/2019	7.1	Associate Professor	Associate Professor		Regular	Yes		No
4	Dr. Nabaneeta Banerjee	XXXXXXX33H	Ph.D	IIEST, Shibpur	Microelectronics & Nanotechnology	18/07/2016	9.9	Associate Professor	Associate Professor		Regular	Yes		No
5	Dr. Somdatta Paul	XXXXXXX64N	Ph.D	Calcutta University	VLSI & Microelectronics	19/02/2024	2.2	Associate Professor	Associate Professor		Regular	Yes		No
6	Dr. Antara Ghosal	XXXXXXX36E	Ph.D	MAKAUT	Microwave & Antenna	02/07/2012	13.9	Assistant Professor	Associate Professor	01/07/2025	Regular	Yes		No
7	Dr. Anurima Majumdar	XXXXXXX72P	Ph.D	MAKAUT	Microwave & Antenna	02/07/2012	13.9	Assistant Professor	Associate Professor	01/07/2025	Regular	Yes		No
8	Mr. Sayan Roy Chaudhuri	XXXXXXX64Q	M.Tech	NIT Durgapur	Embedded system & AI/ML	19/08/2011	14.8	Assistant Professor	Assistant Professor		Regular	Yes		No
9	Ms. Palasri Dhar	XXXXXXX54M	M.Tech	MAKAUT	VLSI & Microelectronics	02/07/2012	13.9	Assistant Professor	Assistant Professor		Regular	Yes		No
10	Mr. Kaustav Madhab Chatterjee	XXXXXXX91K	M.Tech	MAKAUT	VLSI & Microelectronics	03/09/2018	7.7	Assistant Professor	Associate Professor		Regular	Yes		No
11	Ms. Enakshi Basak	XXXXXXX32Q	M.Tech	MAKAUT	VLSI & Microelectronics	06/09/2018	7.7	Assistant Professor	Assistant Professor		Regular	Yes		No
12	Ms. Suranjana Saha	XXXXXXX03D	M.Tech	MAKAUT	VLSI & Microelectronics	06/09/2018	7.7	Assistant Professor	Assistant Professor		Regular	Yes		No
13	Mr. Shouvik Sarkar	XXXXXXX18Q	M.Tech	MAKAUT	Communication Engineering	20/12/2018	7.4	Assistant Professor	Assistant Professor		Regular	Yes		No
14	Mr. Subhabrata Dhar	XXXXXXX26H	M.Tech	MAKAUT	VLSI & Microelectronics	17/06/2019	6.10	Assistant Professor	Assistant Professor		Regular	Yes		No
15	Mr. Shubhadeep Biswas	XXXXXXX07D	M.Tech	MAKAUT	Communication Systems	01/07/2020	5.9	Assistant Professor	Assistant Professor		Regular	Yes		No
16	Ms. Ayantika Goswami	XXXXXXX85B	M.Tech	MAKAUT	Microwave & Antenna	01/09/2022	3.7	Assistant Professor	Assistant Professor		Regular	Yes		No

17	Ms. Hritika Saha	XXXXXXX12P	M.Tech	MAKAUT	VLSI & Microelectronics	01/09/2022	3.7	Assistant Professor	Assistant Professor		Regular	Yes		No
18	Mr. Koustab Maity	XXXXXXX35M	M.Tech	MAKAUT	Communication Systems	02/08/2021	4.8	Assistant Professor	Assistant Professor		Regular	Yes		No
19	Ms. Madhurima Sarkar	XXXXXXX30A	M.Tech	IIT KGP	Electromagnetic Interference (EMI)	01/03/2024	2.1	Assistant Professor	Assistant Professor		Regular	Yes		No
20	Mr. Abir Lal Mondal	XXXXXXX34L	M.Tech	MAKAUT	Communication Systems	12/06/2025	0.10	Assistant Professor	Assistant Professor		Regular	Yes		No
21	Dr. Sayantika Chowdhury	XXXXXXX29B	Ph.D	Jadavpur University	Electron Devices	12/06/2025	0.10	Assistant Professor	Assistant Professor		Regular	Yes		No
22	Dr. Adhish Kumar Chakraborty	XXXXXXX25N	Ph.D	Jadavpur University	Instrumentation and Control	01/07/2004	21.10	Assistant Professor	Professor	01/07/2023	Regular	Yes		No
23	Dr. Surajit Basak	XXXXXXX78G	Ph.D	IIEST, Shibpur	Communication Systems and IoT	19/02/2010	16.2	Assistant Professor	Professor	01/07/2025	Regular	Yes		No
24	Mr. Koushik Pal	XXXXXXX81B	M.Tech	Calcutta University	Image Processing	01/08/2007	18.9	Assistant Professor	Assistant Professor		Regular	Yes		No
25	Ms. Swagata Bhattacharya	XXXXXXX10P	M.Tech	IIEST, Shibpur	VLSI & Microelectronics	11/01/2010	16.3	Assistant Professor	Assistant Professor		Regular	Yes		No
26	Mrs. Soma Boral	XXXXXXX22R	M.Tech	MAKAUT	Communication Systems	22/02/2010	16.2	Assistant Professor	Assistant Professor		Regular	Yes		No
27	Dr. Arun Kumar Mondal	XXXXXXX65A	Ph.D	Jadavpur University	Communication Systems	05/10/2012	12.9	Professor	Professor		Regular	No	10/07/2025	No
28	Dr. Sunipa Roy	XXXXXXX14B	Ph.D	Jadavpur University	VLSI & Microelectronics	05/08/2014	10.11	Associate Professor	Professor	01/07/2023	Regular	No	14/07/2025	No
29	Dr. Pijush Kanti Bhattacharjee	XXXXXXX00H	Ph.D	Assam University	Communication Systems	03/09/2018	5.10	Professor	Professor		Regular	No	16/07/2024	No
30	Mr. Shatadru Biswas	XXXXXXX85E	M.Tech	MAKAUT	Communication Systems	03/08/2020	3.11	Assistant Professor	Assistant Professor		Regular	No	09/07/2024	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(2025-26)**	**CAYm1 (2024-25)**	**CAYm2 (2023-24)**
UG1.B	131	130	132
UG1.C	130	132	131
UG1.D	132	131	130
UG1: Electronics & Communication Engineering	**393**	**393**	**393**
PG1.A	18	18	18
PG1.B	18	18	18
PG1: Electronics & Communication Engineering	**36**	**36**	**36**
DS=Total no. of students in all UG and PG programs in the Department	429	429	429
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=** 429	**S2=** 429	**S3=** 429
DF=Total no. of faculty members in the Department	26	26	26
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=** 26	**F2=** 26	**F3=** 26
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= 16.50**	**SFR2= 16.50**	**SFR3= 16.50**
Average SFR for 3 years	**SFR= 16.50**		

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)]**
2025-26(CAY)	10	16	21.00	19.52
2024-25(CAYm1)	11	15	21.00	20.24
2023-24(CAYm2)	9	17	21.00	18.81

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
2025-26	2.00	4.00	5.00	5.00	14.00	17.00
2024-25	2.00	4.00	5.00	5.00	14.00	17.00
2023-24	2.00	4.00	5.00	5.00	14.00	17.00
Average	RF1=2.00	AF1=4.00	RF2=5.00	AF2=5.00	RF2=14.00	AF2=17.00

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	Prof.(Dr.) Sisir Kumar Das	Formerly Scientist C	SAMEER, Chennai	1. Advanced Digital Communication (MCE 101) 2. Wireless And Mobile Communication (MCE 202)	26.00
2	Mr. Sourav Chakraborty	CEO	Appex Solution	1. Advanced Python Programming (EC505D) 2. Object Oriented Programming using JAVA (EC604A)	27.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Prof.(Dr.) Sisir Kumar Das	Formerly Scientist C	SAMEER, Chennai	1. RF & Microwave Engineering (EC502) 2. Wireless And Mobile Communication (MCE 202)	26.00
2	Mr. Sourav Chakraborty	CEO	Appex Solution	1. Digital Image & Video Processing (EC 701B) 2. Object Oriented Programming using JAVA (EC604A)	26.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Prof.(Dr.) Sisir Kumar Das	Formerly Scientist C	SAMEER, Chennai	1. Information Theory & Coding (EC504A) 2. RF & Microwave Engineering (EC603)	27.00
2	Mr. Sourav Chakraborty	CEO	Appex Solution	1. Digital Signal Processing (EC503) 2. Cloud Computing (EC802A)	26.00

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	4	9	5
2	No. of peer reviewed conference papers published	25	24	17
3	No. of books/book chapters published	30	12	11

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. Sunipa Roy	Dr. Kaushik Roy	ECE	AICTE VAANI Seminar Grant (Topic: Sustainable Semiconductor Manufacturing)	AICTE	2 days (21-22 Nov, 2024)	1.73
Dr. Sunipa Roy	Dr. Ipsita Saha (CSE)	ECE	ATAL FDP Grant (Topic-Quantum Computing and Nanotechnology: Synergy and Future Prospects)	AICTE	6 days (3-8 Feb, 2025)	2.50
Dr. Antara Ghosal	NA	ECE	Development of slotted patch antenna for wideband operation	Anritsu India Private Limited	1 year	0.42
						Amount received (Rs.):4.65

(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. Suparna Biswas	Dr. Sunipa Roy	ECE	SERB Assistance to Professional Bodies and Seminar Symposia (National Conference on Machine Learning in Healthcare Applications, MLHA-2024)	SERB	2 days (18-19 April, 2024)	1.00
Dr. Surajit Basak	NA	ECE	Smart Water Level Controller System	Robsync Smart Solutions	1 year	0.37
						Amount received (Rs.):1.37

(CAYm3)

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
Ms. Anurima Majumdar	NA	ECE	Design and Development of a Wearable Microstrip Patch Antenna for Sub-6 GHz Wireless Communication Applications	Anritsu India Private Limited	1 year	0.35
Dr. Kaushik Roy	NA	ECE	Thin Film Fabrication Using Biosynthesized Metal Nanoparticles	The Electro Inventor	1 year	0.26
						Amount received (Rs.):0.61

Total Amount (Lacs) Received for the Past 3 Years: 6.63

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. Arun Kumar Mondal	NA	ECE	Operation and Evaluation of Audio-Visual Equipments	Poddar System & Services	1 year	1.24
Dr. Sunipa Roy	NA	ECE	Performance audit of Nanotech equipments	Siyatech Pvt Ltd	1 year	2.71
Dr. Avali Banerjee	NA	ECE	Performance audit of microwave antenna	Core Scientific Systems Pvt Ltd	1 year	0.80
Dr. Anurima Majumdar	NA	ECE	Performance analysis of wide band dual polarized patch antenna	Anritsu India Private Limited	1 year	1.30
						Amount received (Rs.):6.05

(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. Arun Kumar Mondal	NA	ECE	Operation and Evaluation of Audio-Visual Equipments	Poddar Systems Pvt Ltd	1 year	1.51
Dr. Sunipa Roy	NA	ECE	Performance audit of Nanotech equipments	Siyatech Pvt Ltd	1 year	1.62
Dr. Nabaneeta Banerjee	NA	ECE	Performance analysis of ZnO based alcohol sensors	Anatech Instruments Pvt. Ltd.	1 year	1.60
Dr. Kaushik Roy	NA	ECE	Development of functional devices based on metal thin films	Electro Inventor	1 year	1.00
						Amount received (Rs.):5.73

(CAYm3)

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. Arun Kumar Mondal	NA	ECE	Resource person for audio-visual equipments	Poddar Systems Pvt Ltd	1 year	1.34
Dr. Soumik Podder	NA	ECE	Performance audit of VLSI products	Semifront Technologies Pvt Ltd	1 year	1.48
Dr. Pijush Kanti Bhattacharjee	NA	ECE	Performance Evaluation and Audit of Telecom Antenna Systems	Core Scientific Systems Pvt Ltd	1 year	1.81
						Amount received (Rs.):4.63

Total amount (Lacs) received for the past 3 years: 16.41

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. Nabaneeta Banerjee	Study on methanol sensing Performance of ZnO nano-tube based Capacitive Sensor	1 year	0.97	0.97	Journal publication
Dr. Kaushik Roy	Study of Conductivity of Thin Film prepared using Biogenic Silver Nanoparticles	1 year	1.19	1.19	Conference publication
			Amount received (Rs.): 2.16		

(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. Anurima Majumdar	Design and Analysis of wide band dual polarized microstrip patch antenna	1 year	1.16	1.16	Journal publication, PhD awarded
Dr. Antara Ghosal	Design and Analysis of slotted patch antenna for wideband operation	1 year	0.96	0.96	Prototype developed, PhD awarded
			Amount received (Rs.): 2.12		

(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. Kaushik Roy	Study of Conductivity of Thin Film prepared using Biogenic Copper Nanoparticles	1 year	0.98	0.98	Conference publication
Mr. Koushik Pal	Smart Automated Garbage Management System to Replace Human Labour	1 year	1.00	1.00	Journal publication
			Amount received (Rs.): 1.98		

Total amount (Lacs) received for the past 3 years : 6.26

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	BASIC ELECTRONICS LABORATORY	5	Cathod Ray oscilloscope • Function Generator • D.C. Power Supply • A.C. Power Supply • Digital Multimeter	3 classes per v	Dyuti Nandi	Technical Assistant	Diploma in Electronics & T
2	ANALOG ELECTRONICS LABORATORY	5	Digital Storage Oscilloscope • Cathode Ray Oscilloscope •Function generator •Analog-Digital	4 classes per v	Avijit Deb	Technical Assistant	Diploma in Electronics & T
3	DIGITAL ELECTRONICS LABORATORY	5	Cathode Ray Oscilloscope •Digital Trainer Kit •I.C. Tester	4 classes per v	Avijit Deb	Technical Assistant	Diploma in Electronics & T
4	ANTENNA & PROPAGATION LABORATORY	5	Microwave Test bench setup •Basic Antenna Training Setup •Advance Antenna Training System	4 classes per v	Amalesh Chandra Ghatak	Technical Assistant	B.Tech in Electronics & cc
5	MICROWAVE ENGINEERING LABORATORY	5	MicrowaveTest benchsetup DigitalStorageOscilloscope	4 classes per v	Amalesh Chandra Ghatak	Technical Assistant	B.Tech in Electronics & cc
6	ANALOG & DIGITAL COMMUNICATION LABORATORY	5	Amplitude Modulation Transmitter Kit •Amplitude Demodulator kit •Selectivity-Sensitivity fidelity of a	4 classes per v	Sulata Pandit	Technical Assistant	Diploma in Electronics & T
7	DIGITAL SIGNAL PROCESSING LABORATORY	5	DSP Kit(5416), ii)DSP Kit(6713),iii) Matlab 2013 5 users license version software, iv)University Program	4 classes per v	Dyuti Nandi	Technical Assistant	Diploma in Electronics & T
8	VLSI LABORATORY	5	i)UPS ,ii)6URACK (Steel Valrack) with VR FAN For RACK ,iii)T SPICE Pro-5 users license software	4 classes per v	Sulata Pandit	Technical Assistant	Diploma in Electronics & T
9	DBMS & OOPS USING JAVA LABORATORY	5	COMPUTERSET 15Desktop Dell Vostro 3471SFF.9thGenerationIntel Core-i59400 (9 MB	4 classes per v	Ananya Mandal	Technical Assistant	Diploma in Electronics & T
10	Data Structure Lab	5	Dell Vostro and Dell Optiplex desktop	4 classes per v	Dyuti Nandi	Technical Assistant	Diploma in Electronics & T
11	COMPUTER ARCHITECTURE LABORATORY	5	Cathode Ray Oscilloscope, IC Tester, Logic Bread Board System	4 classes per v	Amalesh Chandra Ghatak	Technical Assistant	B.Tech in Electronics & cc
12	CIRCUIT THEORY & NETWORKS LABORATORY	5	DC power supplies, function generators, digital storage oscilloscopes (DSO), digital multimeters, analog	4 classes per v	Vivekananda Kumar	Technical Assistant	Diploma in Electronics & T
13	DIGITAL IMAGE & VIDEO PROCESSING LABORATORY	5	6U RACK (Steel Valrack) with VR FAN For RACK (Wizertech Informatics), Matlab 2013 5 users license	4 classes per v	Sulata Pandit	Technical Assistant	Diploma in Electronics & T

14	EMBEDDED SYSTEM LABORATORY	5	Micro Tutor kit(set) PICIBF4455 ARM Cortex M3Specifcation Educational Practice Board for ARM	4 classes per v	Sulata Pandit	Technical Assistant	Diploma in Electronics & T
15	CONTROL SYSTEM LABORATORY	5	SOFTWARE - MATLAB (Perpetual Concurrent Network License ; Academic Version*;Windows/ Linux/Mac	4 classes per v	Dyuti Nandi	Technical Assistant	Diploma in Electronics & T
16	MOBILE COMMUNICATION & NETWORK LABORATORY	5	Computer Set-Dell(i5 processor, 8GB RAM, 1TB HDD), Computer Set-Dell(i3 processor, 4GB RAM, 1TB HDD),	4 classes per v	Amalesh Chandra Ghatak	Technical Assistant	B.Tech in Electronics & cc
17	INTRODUCTION TO IOT LABORATORY	5	COMPUTERSET 15Desktop Dell Vostro 3471SFF.9thGenerationIntel Core-i59400 (9 MB	4 classes per v	Ananya Mandal	Technical Assistant	Diploma in Electronics & T
18	Microprocessor & Microcontroller Lab	5	Demonstration Programs for 8085 Trainer Kit, Demonstration Programs for 8086 Trainer Kit,	4 classes per v	Saswati Chatterjee	Technical Assistant	Diploma in Electronics & T
19	Introduction to AI Lab	5	Desktop Computers with AI & Machine Learning Software, GPU-Enabled Workstations (optional), High-	4 classes per v	Ananya Mandal	Technical Assistant	Diploma in Electronics & T
20	Solid State Device Lab	5	PN Junction Diode Trainer Kit, Zener Diode Trainer Kit, BJT (CE) Characteristics Trainer Kit, JFET	4 classes per v	Avijit Deb	Technical Assistant	Diploma in Electronics & T
21	Satellite Communication Laboratory	5	Fiber Optics Trainer Kits (ST-2502), Fibre Optical Tool Kit (ST-2512), Satellite Communication Trainer Kit	4 classes per v	Dyuti Nandi	Technical Assistant	Diploma in Electronics & T
22	Machine Learning Lab	5	High-Performance Desktop Computers/Workstations, GPU-Enabled Workstations (optional), AI/ML Software	4 classes per v	Sulata Pandit	Technical Assistant	Diploma in Electronics & T
23	Electronic Devices Lab	5	Electronic Devices Trainer Kit, Regulated DC Power Supply, Digital Storage Oscilloscope (DSO), Function	4 classes per v	Avijit Deb	Technical Assistant	Diploma in Electronics & T
24	Engineering Physics Laboratory	5	Slide calipers/ Screw- gauge/travelling microscope, Carrey Foster Bridge, CRO , LCR circuit, Photoelectric	4 classes per v	Mr. Sushanta Auddy	Technical Assistant	B.Sc.in physics
25	Engineering Chemistry Laboratory	5	Digital Balance, Double distilled water plant, PH meter , Conductivity meter, Ostwald visco meter	4 classes per v	Mr.Chandan Kumar Bhatt	Technical Assistant	B.Sc (Chemistry Honours)
26	Workshop and Manufacturing Practices	5	Fitting operations & power tools, Welding (arc welding & gas welding), brazing. Electrical & Electronics Metal	4 classes per v	Mr. Ashok Kr. Ghosh	Technical Assistant	Diploma in Mechanical En
27	Basic Electrical Engineering Laboratory	5	Single phase transformer, Network Theorem Hardware Kit, Fluorescent, Tungsten and Carbon filament lamps,	4 classes per v	Mr. Arnab Kumar Roy	Technical Assistant	Diploma in Electrical Engi
28	Engineering Graphics & Design	5	Computer CAD software	4 classes per v	Mr. Ashok Kr. Ghosh	Technical Assistant	Diploma in Mechanical En

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures

1	BASIC ELECTRONICS LABORATORY	Do's: • Keep bags at the entrance of the lab. Maintain silence. • Switch off the power button of electronics equipment after use. • Return the tools and test equipments after use • Submit lab copy regularly • Switch off fan, light when not in use Don'ts: • Do not keep any computer switched on when not in use. • Do not touch any live wire. • Do not use mobile phones in the lab. • Do not download any unnecessary documents from the internet. • Do not open any restricted site or games in the lab. Don't be late.
2	ANALOG ELECTRONICS LABORATORY	Do's: • Maintain silence. • Switch off the power button of electronics equipment after use. • Return the tools and test equipment after use. • keep bags at the entrance of the lab • Switch off fan, light when not in use • submit lab copy regularly Don'ts: • Do not touch any live wire. • Do not keep any computer switched on when not in use. • Do not use mobile phones in the lab. • do not download any unnecessary documents from internet • Don't be late. • do not open any restricted site or games in the lab
3	DIGITAL ELECTRONICS LABORATORY	Do's: • Keep bags at the entrance of the lab. • Maintain silence. • Switch off the power button of electronics equipment after use. • Return the tools and test equipment after use. • Submit lab copy regularly. • Switch off the fan, light when not in use. Don'ts: • Don't be late. • Do not keep any computer switched on when not in use. • Do not touch any live wire. • Do not use mobile phones in the lab. • Do not download any unnecessary documents from the internet. • do not open any restricted site or games in the lab
4	ANTENNA & PROPAGATION LABORATORY	Do's: • maintain silence • Shut down the computer after use. • Return the tools and test equipment after use. • Keep bags at the entrance of the lab. • Submit lab copy regularly. • Switch off fan, light, ac when not in use. • Stay at your experimental table. Don'ts: • Do not touch any live wire. • Do not keep any computer switched on when not in use. • Do not use mobile phones in the lab. • Do not download any unnecessary documents from the internet. • Don't be late. • do not open any restricted site or games in the lab. • don't put your eyes near RF/microwave transmission
5	MICROWAVE ENGINEERING LABORATORY	Do's: • shut down the computer after use • Maintain silence. • Return the tools and test equipment after use. • Keep bags at the entrance of the lab. • Stay at your experimental table. • Submit lab copy regularly. • Switch off fan, light, ac when not in use. Don't: • Don't put your eyes near RF/microwave transmission. • Do not touch any live wire. • Do not keep any computer switched on when not in use. • Do not use mobile phones in the lab. • do not download any unnecessary documents from internet • Don't be late. • do not open any restricted site or games in the lab
6	ANALOG & DIGITAL COMMUNICATION LABORATORY	Do's: • Return the tools and test equipment after use. • Keep bags at the entrance of the lab. • Maintain silence. • Switch off the power button of electronics equipment after use. • Submit lab copy regularly. • Switch off the fan, light when not in use. Don't: • Do not keep any computer switched on when not in use. • Do not touch any live wire. • Do not use mobile phones in the lab. • Don't be late. • do not open any restricted site or games in the lab • Do not download any unnecessary documents from the internet.
7	DIGITAL SIGNAL PROCESSING LABORATORY	Do's: • shut down the computer after use • return the tools and test equipment after use • keep bags at the entrance of the lab • Maintain silence • submit lab copy regularly • Switch off fan, light, as when not in use. Don't: • don't be late • do not keep any computer switched on when not in use • do not touch any live wire • do not use mobile phones in lab • do not open any restricted site or games in the lab • Do not download any unnecessary documents from the internet.
8	VLSI LABORATORY	Do's: • Return the tools and test equipments after use • shut down the computer after use • switch off fan, light, ac when not in use • keep bags at the entrance of the lab • Maintain silence • submit lab copy regularly Don't: • do not touch any live wire • don't be late • do not keep any computer switched on when not in use • do not use mobile phones in lab • do not open any restricted site or games in the lab • Do not download any unnecessary documents from the internet.
9	DBMS & OOPS USING JAVA LABORATORY	Do's: • return the tools and test equipments after use • shut down the computer after use • switch off fan, light, ac when not in use • keep bags at the entrance of the lab • Maintain silence. Submit lab copy regularly Don'ts: • do not touch any live wire • don't be late • do not keep any computer switched on when not in use • do not use mobile phones in lab • do not open any restricted site or games in the lab • Do not download any unnecessary documents from the internet.

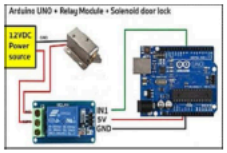
D3. Project Laboratory/Research Laboratory

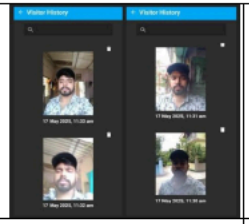
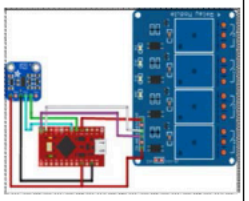
1. Project laboratory

Table A: High-End Equipment and Software Facilities Available for Student Projects and Research

Sl. No.	Equipment / Software	Key Specifications	Types of Projects Supported
1	Cadence Academic EDA Software (Level-1)	Industry-standard EDA suite for RTL design, simulation, synthesis, physical implementation, timing analysis and verification	VLSI Design, Digital IC Design, ASIC Design, SoC Design, FPGA-based Design
2	MATLAB & Simulink (Academic License)	Mathematical modeling, simulation, DSP, Communication, Image Processing, AI/ML and Control System toolboxes	Signal Processing, Wireless Communication, Image Processing, Control Systems, Artificial Intelligence, Machine Learning
3	Vector Network Analyzer (N9917A, 18 GHz)	18 GHz frequency range, 2-port S-parameter measurement, Cable & Antenna Analyzer, Time Domain Analysis (TDR)	Antenna Design, RF & Microwave Engineering, 5G Communication, Wireless Communication Projects
4	High-Performance CAD Workstations	Intel Core i7/i9 Processor, 16–32 GB RAM, SSD Storage, Linux/Windows OS	VLSI Design, MATLAB Simulation, AI/ML Applications, Embedded System Development
5	Raspberry Pi 4 Development Kit	Quad-core ARM Cortex Processor, Wi-Fi, Bluetooth, GPIO, Linux OS	Edge Computing, AIoT, Smart Surveillance, Robotics, IoT Gateway, Embedded Linux Projects
6	ESP32 Development Board	Dual-core MCU with Wi-Fi & Bluetooth, ADC, DAC, GPIO	Smart Home Automation, Healthcare IoT, Smart Agriculture, Industrial IoT, Embedded Systems
7	NodeMCU ESP8266 Development Board	Wi-Fi-enabled MCU with GPIO, UART, SPI and I²C	IoT Applications, Environmental Monitoring, Smart Energy Meter, Cloud-based Monitoring
8	Arduino UNO Development Board	ATmega328P MCU, Digital & Analog I/O, UART, SPI, I²C	Embedded Systems, Robotics, Sensor Interfacing, Automation and Control Projects
9	IoT Sensor Development Kit	DHT11, LM35, Ultrasonic, IR, Soil Moisture, Rain, ECG (AD8232), Relay, Servo, LED, Buzzer	Smart Agriculture, Smart Home, Healthcare Monitoring, Environmental Monitoring, Industrial Automation
10	Digital Storage Oscilloscope (DSO)	Multi-channel Oscilloscope with High Bandwidth	Electronics, Communication Systems, Embedded Systems, Power Electronics
11	Waveform Generator	Multi-waveform Signal Generator	Analog Electronics, Communication Systems, Filter and Amplifier Design
12	Spectrum Analyzer	RF Spectrum Measurement and Signal Analysis	RF Communication, Microwave Engineering, EMI/EMC Studies

Table B: Some working models in Project Lab

Sl. No.	Project Title	Faculty Name	Students Name	Image of project Model	Project Outcome	
					Description of publication from the Project	Description of the project
1	Arduino- based turbidity sensor for water purity monitoring	Dr. Nabaneeta Banerjee	Abir Mitra, Aditi Ray, Aman Kumar, Ananya Jana, Arkaprova Das		Patent published on 07.11.2025 Entitled "SYSTEMFOR MONITORING WATER TURBIDITY AND TDS UNDER THERMAL VARIATION" With application number: 202531088247A.	This project provides a system for monitoring quality for nine different types of water by simultaneously measuring turbidity and total dissolved solids (TDS) under thermal variation. By correlating turbidity, TDS and temperature data, the system generates thermally stabilized values that provide an accurate and reliable representation of water quality across a temperature range of 15°C to 150°C.
2	Fingerprint door lock system by Arduino	Dr. Nabaneeta Banerjee	Sonali Podder, Sougata Dey, Soumyadee P Mahapatra, Soumyasis Das, Souramita Banik, Sourin Biswas		Published in IJSCI journal with title "Fingerprint Door Lock System by Arduino "with DOI: Https://doi.org/10.70849/ijsci	This project presents a biometric fingerprint door lock system utilizing Arduino, designed to enhance traditional locking mechanisms with a more secure and efficient solution. The system integrates a fingerprint sensor module with an Arduino microcontroller to authenticate users based on stored biometric data
			RIDDHI MITRA, PRANAY GHOSH, ANANYA		Published in IJSCI journal with title "Automated	The Automated Doorbell Using Face Detection project aims to enhance traditional doorbell systems by integrating AI-based object detection technology. The system is designed

3	Automated doorbell usingface detection	Dr. Nabaneeta Banerjee	BANERJEE, DEBALINA BASU, DEBOLINA NEOGI, ARKAJIT BHATTACHARJ EE,		Doorbell Using Face Detection" with DOI: https://doi.org/10.70849/ijsci	to identify and distinguish between humans, animals, and inanimate objects at the doorstep, ensuring intelligent and context-aware notifications. This automation eliminates unnecessary disturbances caused by irrelevant motion.
4	Automatic contactless switch for smart home	Dr. Nabaneeta Banerjee	SUMAN SAHA, MD SHAFI ALAM, AMBIKA ROY, ANIKET SINGH, MD. ASHIF MALLICK	 	Published in IJSCI journal with title "Automatic Contactless Switch for Smart Home" with DOI: https://doi.org/10.70849/ijsci	This project presents an automatic contactless switch system designed for smart home environments, enabling users to control electrical appliances through gesture recognition and proximity sensing without physical interaction. Such a touch free interface is particularly beneficial for enhancing hygiene, especially in post-pandemic scenarios, and for assisting the elderly or physically challenged individuals.
5	Arduino- based smart dustbin	Dr. Nabaneeta Banerjee	ANKIT TIWARI, ARIJIT DAS, MILAN CHATTERJEE,		Published in IJSCI journal with title "Arduino-Based Smart Dustbin " with DOI: https://doi.org/10.70849/ijsci	The system utilizes an Arduino Uno microcontroller in conjunction with ultrasonic sensors to detect the presence of a person or object near the dustbin. When motion is detected within a predefined range, the dustbin lid automatically opens using a servo motor, allowing for touch free disposal of waste. Additionally, the system can be enhanced with IR sensors, gas

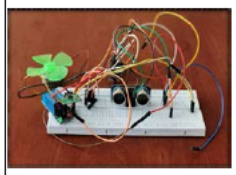
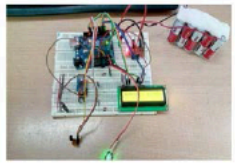
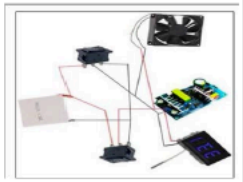
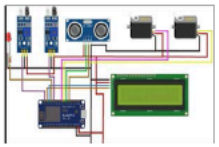
6	Ann- based touchless home appliance control for handicapped	Dr. Nabaneeta Banerjee	ABIR MITRA, ADITIRAY, AMAN KUMAR, ANANYA JANA, ARKAPROVA DAS			In this project, an Artificial Neuron Based Assistive Automation System for Disabled People has been successfully designed and implemented. The system effectively combines basic artificial intelligence concepts with automation to assist visually impaired and physically challenged individuals in their daily activities. By using sensors such as an ultrasonic sensor and PIR sensor, the system is able to detect obstacles and human presence in real time.
7	Heartbeat And temperature measurement using arduino uno: a low- cost	Dr. Kaushik Roy	ANIRBAN DAS, DEBANJAN DAS, RAHUL DAS,ARIJIT SENGUPTA, NISHAN DUTTA			This paper presents a novel approach to measuring both heartbeat and temperature using Arduino Uno microcontroller board. The proposed system offers a low-cost yet effective solution for continuous health monitoring. The hardware setup, software implementation, and experimental results demonstrating the accuracy and reliability of the system is discussed.
8	Flexibox: an innovative portable food storage solution	Dr. Kaushik Roy	SAAYAN GHORUI, PRAGYA PARAMITA SAHA, ARPAN GHOSH, MOUSUMI NANDY, SHIBAS SEN, INDRANIL BISWAS		Published in IJISR journal with title "FLEXIBOX: An Innovative Portable Food Storage Solution" with DOI: https://doi.org/10.38124/ijisrt/25apr1275	The FLEXIBOX is an innovative, portable food storage solution designed to maintain optimal food temperatures, keeping meals warm or cold on the go. Utilizing the power of Peltier thermoelectric modules, the box integrates both heating and cooling functionalities in a compact, energy-efficient design.
9	Nodemcu esp8266 based smart car parking system	Dr. Nabaneeta Banerjee	ARJYAMA SEAL, DEBJIT BERA, PRATYUSHA BHATTACHARYA, ARITRA GHOSAL, ARKO SAHA		Published in IJIRT journal with title "nodemcu ESP8266 based Smart Car Parking System" https://ijirt.org/publishedpaper/IJIRT160939_PAPER.pdf	Smart car parking system mainly used for locating free space in parking slot. The system is designed to reduce the time and effort of human being, they put in case of car parking. The complete setup is made up of four components, which can help to build a smart city.

Table C: Outcomes of Student Projects (CAY-3, CAY-2 and CAY-1)

Particulars	CAY (2025-26)	CAYm1 (2024-25)	CAYm2 (2023-24)
No. of Student Projects	8	15	16
Journal Publications	5	79	51
Conference Publications	2	7	20
Working Prototypes	5	7	6
Event Participation	4	6	4

2. R & D Lab (FIST Lab)

Equipments used in R & D Lab (FIST Lab)

Sl. No.	Name of the equipments	Details	Purpose for creating facility
1	Thermal Vacuum Coater	Make: Transcend Engineering Enterprise Model:SS-304	For depositing metal or metal oxide contacts on flat substrates by evaporating melted material at high temperature.
2	FT-IR Spectrometer	Make: PerkinElmer Model: Spectrum Two	For the identification of unknown materials and confirmation of production materials and revealing the composition of solids, liquids and gases.
3	Utra-CENTRIFUGE	Make: REMI Model: RM 12C & RM-1215	For growing routine application in biochemical and clinical labs, for Hematocrit, Corpuscle Percentage contents in blood, Serum analysis and precipitate separation etc
4	Spin Coater	Make: Delta Scientific Equipment Pvt. Ltd. Model: DELTASPIN-MC	For thin film material spin coating applications for universities, laboratory and R & D centres to deposit uniform thin films onto flat substrates of several stages.
5	Hot Plate	Make: REMI	To perform chemical reactions and to heat samples.
6	Digital Hot Air Oven	Make: Kolkata Scientific & CO Model: KSC-HO-741	For dry glassware, sterilize N95 masks, general instruments and packaging items in life science, microbiology laboratory, chemical and pharmaceutical industries, food and beverage industries, textile industries.
7	Electronic Balance	Make: Sartorius AG Germany Model: Practum 124	Used in the accurate measurement of weight of materials for the laboratories for precise measurement of chemicals which are used in various experiments and provides digital result of measurement with the highest standards of speed, reliability, compliance safety
8	Semiconductor Parameter Analyzer	Make: Hioki Model: IM3536	All-in-one unit of a power supplies, voltage meters, current meters, switching matrices and LCR meters to test semiconductors and conducting both current-voltage and capacitance measurements.

9	Hydraulic Press	Make: PCI Analytics	Producing a force about 15 tones use to make high quality 13mm pallet used for IR/FTIR/XRF Solid sampling, typically used by R&D & QC labs for various palletizing application whether pressure is applied on any object placed between screw and piston top plate.
10	Fluroscence spectro photo meter	Make: PerkinElmer Model: UVSN4200011	Used to measure the light emitted by molecules (fluorescence) after absorbing specific wavelengths of radiation and for quantitative and qualitative analysis in materials science to detect low concentrations of substances.
11	HALL EFFECT measurement setup	Make: SES Instruments Pvt. Ltd Model: DPS-50C,DHE-21C,DGM-202	Used to determine key material parameters: charge carrier type (n-type or p-type), carrier concentration, carrier mobility and electrical resistivity and also used in characterization, magnetic field sensing and industrial automation.
12	UV/VIS spectrophotometer	Make: LABMAN Scientific Instruments	UV characterization
13	Annealing tube furnace	Make: GB ENTERPRISE	annealing
14	Double distillation unit	Make: G.B. Enterprise	Purification
15	Laminar Air Flow	Make: G.B. Enterprise	Laminar air flow is referred to as a system that provides continuous air flow that is uniform in both direction and velocity. Laminar air flow cabinets facilitate unidirectional air flow in a confined space.
16	Precision Multi meter 6.5 digit	Make: FLUKA Model: 8846A	Handling most demanding measurements on the bench or in a system, which measures volts, ohms, and amps, with basic V dc accuracy of up to 0.0024%, 10 A current ranges and a wide ohms range and also measures frequency and period.

3. Industry supported Laboratory : Drone Laboratory

Name of the Supporting Industry: Megh Robotics Pvt Ltd. , Kolkata

About the Industry: Megh Robotics Pvt Ltd.is an Indian defense-tech startup incubated by the IIT Patna Incubation Center. Founded in 2018 by Sobhan Chakraborty, it specializes in indigenous counter-drone systems, anti-unmanned aerial vehicle (UAV) technologies, and advanced surveillance equipment designed for police forces and government security agencies.

Figure 7.1 : Industry Supported Laboratory : Drone Lab

SL. No.	Equipment Name	Equipment Details	Equipment Purpose	QTY	Impact Analysis
01	Training UAV (Quadcopter)	Model V Trainer UAV by CBAI Technologies Private Limited 40 mins endurance Weight 5.3 Kg Max Alt 120m AGL	UAV Flight Training as per DGCA Guidelines	2	Provides hands-on UAV flight training aligned with DGCA standards, improves pilot competency, enhances operational safety and prepares students for industry certification and employment.
02	Training Nano UAV	NOT 4K (249 gm)	Handson Flight Training	3	Enables beginners to safely learn drone operations, improves flight control skills, and builds confidence through practical training with lightweight UAVs.
03	F450 (Assembled Quadcopter)	Assembling Quadcopter of 450 mm wheel base and accessories including motos, esc, propellers, battery, GPS, RC	UAV Assembling and Flight Controller Algorithm training	3	Develops practical skills in UAV design, assembly, integration, troubleshooting, and flight controller programming, strengthening students' knowledge in embedded systems and drone technology.
04	Training Simulation	FlySky Training Simulator with FlySky Transmitter	UAV Simulation Based Flight Training	5	Allows students to practice flight operations in a risk-free virtual environment, reducing equipment damage while improving flying proficiency before real-world deployment.
05	Spare Propellers Motos and Esc Set	Generic brands for user operations	UAV repairing/replacing/ spare parts backup	3 Set	Ensures uninterrupted laboratory activities by supporting maintenance, repairs, and component replacement, thereby increasing equipment availability and operational efficiency.
06	Battery & Charger	CBAI & Tattu battery & Charger	For UAV Operations	8 battery 2 charger	Supports extended flight training sessions, minimizes downtime through continuous power availability & enhances the overall utilization of laboratory resources.

4. Centre of Excellence (CoE)

CoE-I :

Name: Centre of Excellence on VLSI Simulation and Verification

Objective: To provide industry-oriented hands-on training in VLSI simulation and verification using EDA tools, supporting B. Tech and M. Tech curriculum, projects and research.

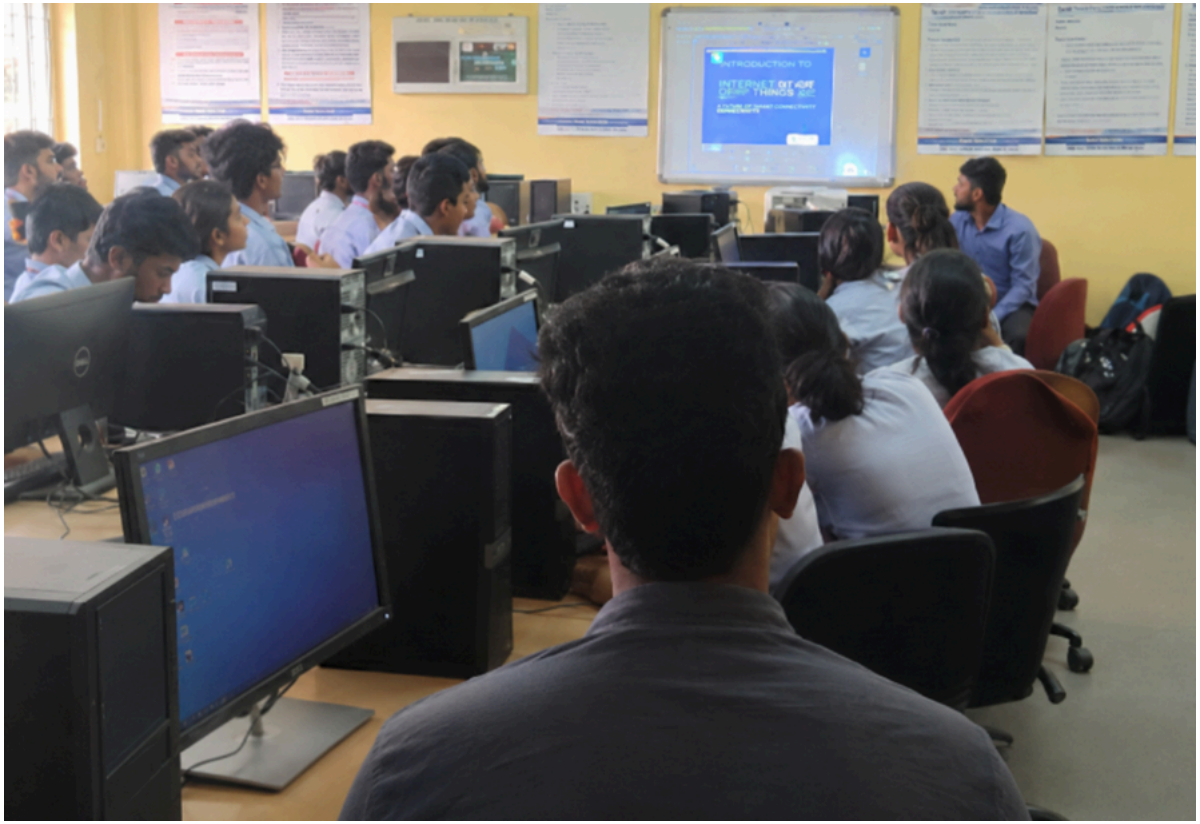


Figure 7.2 : Centre of Excellence on VLSI Simulation and Verification

Equipment Name	Equipment Details	Equipment Purpose	QTY	Impact analysis
Cadence Level one Software	Intel® Core™ i5 or i7 or above 4.30 GHz (Faster processors are preferred) Memory 8GB or 16GB (dependent on the design complexity) OS RHEL 7.7/7.9, >i7 proc 8.7 RHEL OS is preferred. Disc Space 1Tb (RHEL 7) >=1Tb (RHEL8)	Refers students from theoretical circuit concepts to practical semiconductor design by using Electronic Design Automation (EDA) tools for designing, simulating and laying out integrated circuits (ICs) and Systems-on-Chips (SoCs).	1	Enhanced students' practical competency in VLSI simulation and verification using industry-standard EDA tools. The laboratory supports attainment of POs and PSOs, strengthens B. Tech and M. Tech laboratory courses, mini/major projects, and research activities, while improving students' industry readiness and employability in the semiconductor and EDA domains.

CoE-II.

Name: Centre of Excellence in IoT

Objective: To provide industry-oriented hands-on training in Internet of Things (IoT) technologies using embedded development platforms, sensors, actuators, and wireless communication modules, supporting B. Tech and M. Tech curriculum, projects, innovation and research.

Figure 7.3 : Centre of Excellence in IoT

Equipment Name	Equipment Details	Equipment Purpose	QTY	Impact analysis
IoT Development Kit	ESP8266 NodeMCU, ESP32 Development Board, Ultrasonic Sensor, IR Sensor, DHT11 Temperature & Humidity Sensor, Rain Sensor, Soil Moisture Sensor, ECG Sensor (AD8232), LM35 Temperature Sensor, Water Sprinkler with Pipe, Plastic Cart, 5V Single Channel Relay Module, Relay, Servo Motor, LED, Buzzer, Jumper Wires (M-M, M-F, F-F), USB Cable	Enables students to design, program, interface, and test IoT-based embedded systems using sensors, actuators, microcontrollers, and wireless communication modules. Supports hands-on learning in sensor interfacing, data acquisition, IoT communication, automation, monitoring, and real-time embedded system applications through laboratory experiments and projects.	As Available	This lab provides hands-on experience in developing IoT solutions for smart home, environmental monitoring, healthcare, and industrial automation applications. Students gain practical competency in microcontroller programming, sensor integration, wireless connectivity, cloud-based IoT applications, and embedded system design. The facility contributes to PO and PSO attainment, promotes innovation through mini/major projects and research, and enhances placement opportunities in IoT, embedded systems, automation and Industry 4.0 sectors.

CoE-III.

Name: Centre of Excellence in Antenna Measurement

Objective: The Centre of Excellence in Antenna Measurement aims to provide students and faculty with advanced knowledge and hands-on training in RF and microwave technologies through state-of-the-art Vector Network Analyzer (VNA)-based measurement facilities. The centre seeks to bridge the gap between theoretical concepts and practical applications by promoting experiential learning, innovation, and product development in antenna design, wireless communication, IoT, and emerging 5G/6G technologies. It also facilitates workshops and skill development,programs , enhancing students technical competencies, employability, and research capabilities

Figure 7.4 : **Centre of Excellence in Antenna Measurement**

Equipment Name	Equipment Details	Equipment Purpose	QTY	Impact analysis
Vector Network Analyzer (VNA)	Keysight make 18 GHz FieldFox Microwave Analyzer N9917A-01 pcs. Vector network analyser transmission / reflection N9917A-210- 01 pcs. Vector network analyser full 2-port S-parameters. N9917A-211- 01 pcs. N9910X-701 Rugged phase-stable cable, Type-N(m) to Type-N(m), 18GHz, 3.28 ft or 1 m- 02 pcs. N9910X-849 Coaxial adapter, Type-N (f) to3.5 mm (m), 18 GHz-02 pcs. 85521A Calibration kit, 4-in-1, open, short, load and through, DC to 26.5 GHz, 3.5 mm(f)- 01 pcs. N9917AU-010 Time Domain Analysis- 01 pc, N(m) to 3.5 (m) Adapter-01 pc.	Provides hands-on experience in the measurement and characterization of antennas, RF and microwave components through S-parameter analysis, impedance matching, transmission/reflection measurements, cable testing & time-domain analysis. Supports practical learning in antenna design, wireless communi-cation, and micro-wave engineering.	1	Enhances students' practical competency in antenna characterization, RF and microwave measurements, and S-parameter analysis using industry-standard test equipment. Supports PO and PSO attainment, strengthens laboratory courses, projects, and research, and improves industry readiness in wireless communication and RF engineering.

CoE IV:

Name: Centre of Excellence in Advanced Materials Processing and Characterization

Objective: To **provide advanced facilities for M.Tech. and Ph.D. students to carry out research in materials processing, thin-film fabrication and material characterization.**

Figure 7.5 : Centre of Excellence in Advanced Materials Processing and Characterization

Sl. No.	Name of Equipment	Details	Purpose of the Equipments	Impact Analysis
1	Thermal Vacuum Coater	Make: Transcend Engineering Enterprise Model: SS-304	Used for deposition of thin metallic on substrates of semiconductor devices, sensors.	Enables advanced thin-film fabrication, prototype development and funded research projects.
2	Ultra-Centrifuge	Make: REMI Model: RM12C & RM-1215	Used for separation and purification of nanoparticles, colloids, polymers and advanced materials.	Improves sample quality for research, enabling reliable experimental results and interdisciplinary research.
3	Spin Coater	Make: Delta Scientific Equipment Pvt. Ltd., Model: DELTASPIN-MC	Produces uniform thin coatings for photoresists, nano-materials and sensing layers.	Facilitates fabrication of high-quality thin films for device research, enhancing publication and innovation potential.
4	Hot Plate	Make: REMI	Used for controlled heating, drying and solution preparation during material synthesis.	Supports routine laboratory research with reproducible processing conditions for PG projects.
5	Digital Hot Air Oven	Make: Kolkata Scientific & Co Model: KSC-HO-741	Used for drying, heating of samples before characterization or fabrication.	Improves experimental consistency and material stability, leading to better research outcomes.
6	UV/VIS Spectrophotometer	Make: LABMAN Scientific Instruments	Used for optical characterization, absorbance analysis and band-gap estimation of materials.	Provides essential characterization data for nanomaterials and thin films, strengthening thesis quality and publications.
7	Annealing Tube Furnace	Make: GB ENTERPRISE	Used for controlled annealing, oxidation materials due to temperatures.	Enhances crystallinity and material properties, device fabrication and advanced materials research.

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)	510	26	25	3	79
2024-25(CAYm1)	750	38	38	4	82
2025-26(CAY)	810	40	41	5	84

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	28422000	27853760	7553000	7402318	4942000	4843611	9566000	9362797
Library	4643000	4550172	4429000	4339993	3981000	3902242	3432000	3329399
Laboratory equipment	14005000	13574761	12858000	12469632	10697000	9880307	9116000	8839643
Teaching and non-teaching staff salary	265800000	260484754	214920000	210621810	171249000	167823825	151193000	146658023
Outreach Programs	1465000	1436283	1251000	1226249	1083000	1061235	968000	939653
R&D	20418000	20008275	16654000	16322799	13808000	13532229	12766000	12510506
Training, Placement and Industry linkage	9551000	9263928	7884000	7647133	7570000	7340107	7248000	7103161
SDGs	47875000	46914018	38628000	37854936	24011000	23531932	18169000	17804120
Entrepreneurship	1168000	1133212	1132000	1098457	1045000	1012994	991000	951987
Administrative Expenditure, Misc. Academic	43348300	42153193	36763800	35755187	32003100	31120060	28324000	27531383
Total	**436695300**	**427372356**	**342072800**	**334738514**	**270389100**	**264048542**	**241773000**	**235030672**

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	2841000	2741670	3316000	3199565	3099000	2990878	1816000	1752425
Software	1104000	1065540	0	0	0	0	797000	769088
SDGs	10236000	10030663	9430000	9241184	6562000	6430294	4611000	4518763
Support for faculty development	430000	421759	394000	386344	353000	345880	315000	308821
R & D	2356000	2309305	1881000	1844321	1637000	1606011	1547000	1515940
Industrial Training, Industry expert, Internship	641000	622092	559000	541326	541000	524296	513000	502745
Miscellaneous Expenses*	1124000	1099250	900000	883410	753000	738699	698000	683993
Total	**18732000**	**18290279**	**16480000**	**16096150**	**12945000**	**12636058**	**10297000**	**10051775**