

## NATIONAL BOARD OF ACCREDITATION

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

<b>Program Name</b> : Electronics & Communication Engineering	<b>Discipline</b> : Engineering & Technology
<b>Level</b> : Under Graduate	<b>Tier</b> : 1
<b>Application No</b> : 10459	<b>Date of Submission</b> : 27-03-2025

### PART A- Profile of the Institute

<b>A1.Name of the Institute:</b> K RAMAKRISHNAN COLLEGE OF ENGINEERING	
Year of Establishment : 2008	Location of the Institute: NH45, SAMAYAPURAM, TIRUCHIRAPPALLI
<b>A2. Institute Address:</b> K.Ramakrishnan College of Engineering, Kariyamanikam Road, Samayapuram, Trichy – 621112, Tamilnadu, India.	
City:Tiruchirappalli	State:Tamil Nadu
Pin Code:621112	Website:www.krce.ac.in
Email:principal@krce.ac.in	Phone No(with STD Code):0431-2670699
<b>A3. Name and Address of the Affiliating University (if any):</b>	
Name of the University : ANNA UNIVERSITY	City: Chennai
State : Tamil Nadu	Pin Code: 600025
<b>A4. Type of the Institution:</b> Self-Supported Institute	
<b>A5. Ownership Status:</b> Self financing	

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

- No. of UG programs: 8
- No. of PG programs: 5

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	Artificial Intelligence and Data Science	2020	--	Computer Science and Engineering
2	Engineering & Technology	PG	Communication Systems	2011	--	Electronics and Communication Engineering
3	Engineering & Technology	UG	Computer Science and Business System	2020	--	Computer Science and Engineering
4	Engineering & Technology	PG	Computer Science and Engineering	2013	--	Computer Science and Engineering
5	Engineering & Technology	UG	Computer Science and Engineering	2008	--	Computer Science and Engineering
6	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence & Machine Learning)	2021	--	Computer Science and Engineering
7	Engineering & Technology	UG	Electrical & Electronics Engineering	2008	--	Electrical and Electronics Engineering
8	Engineering & Technology	UG	Electronics & Communication Engineering	2008	--	Electronics and Communication Engineering
9	Engineering & Technology	PG	Engineering Design	2012	--	Mechanical Engineering
10	Engineering & Technology	UG	Information Technology	2020	--	Computer Science and Engineering
11	Engineering & Technology	UG	Mechanical Engineering	2008	--	Mechanical Engineering
12	Engineering & Technology	PG	Power Systems Engineering	2013	--	Electrical and Electronics Engineering
13	Management	PG	Masters of Business Administration	2009	--	Management

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

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

Name of the Department	Having Allied Departments	Name of the Program	Program Level
Electronics and Communication Engineering	No	Electronics & Communication Engineering	UG
Electrical and Electronics Engineering	No	Electrical & Electronics Engineering	UG
Mechanical Engineering	No	Mechanical 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/COMPET AUTHORITY AR DETAILS
1	Electronics & Communication Engineering	UG	2008 / --	60	Yes	2022	120	2022	F. No. Southern/10969216412/20 dated 03-Jul-202

**Sanctioned Intake for Last Five Years for the Communication Systems**

Academic Year	Sanctioned Intake
2024-25	120
2023-24	120
2022-23	120
2021-22	180
2020-21	180
2019-20	180

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. M. Maheswari
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)	120	120	120	180	180	180	180
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	126	126	126	187	120	186	155

N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	2	6	9	19	2	3
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.	126	128	132	196	139	188	158

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)	120	0	0	100.00
2023-24 (CAYm1)	120	0	0	100.00
2022-23 (CAYm2)	120	0	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	(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).	199.00	188.00	183.00
B=No. of students who graduated from the program in the stipulated course duration	128.00	182.00	152.00
Success Rate (SR)= (B/A) * 100	64.32	96.81	83.06

Average SR of three batches ((SR\_1+ SR\_2+ SR\_3)/3): 81.40

#### 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 )
Mean of CGPA or mean percentage of all successful students(X)	7.50	7.67	7.46
Y=Total no. of successful students	126.00	125.00	186.00
Z=Total no. of students appeared in the examination	126.00	125.00	186.00
API [X*(Y/Z)]	7.50	7.67	7.46

Average API[ (AP1+AP2+AP3)/3 ] : 7.54

#### 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 2nd year/10)	7.41	7.62	7.82
Y=Total no. of successful students	131.00	192.00	136.00
Z=Total no. of students appeared in the examination	131.00	195.00	139.00
API [ X * (Y/Z) ]	7.41	7.50	7.65

Average API [ (AP1 + AP2 + AP3)/3 ] : 7.52

#### 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)
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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)	7.69	7.88	8.15
Y=Total no. of successful students	192.00	136.00	184.00
Z=Total no. of students appeared in the examination	192.00	136.00	185.00
API [ X*(Y/Z) ]:	7.69	7.88	8.11

Average API [ (AP1 + AP2 + AP3)/3 ] : 7.89

### 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	199.00	184.00	183.00
X=No. of students placed	111.00	173.00	124.00
Y=No. of students admitted to higher studies	12.00	8.00	2.00
Z= No. of students taking up entrepreneurship	1.00	0.00	0.00
Placement Index(P) = $((X + Y + Z)/FS) * 100$ :	62.31	98.37	68.85

Average Placement Index =  $(P_1 + P_2 + P_3)/3$ : 76.51 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)
1	Dr. M. Maheswari	XXXXXXXX79H	Ph.D	Anna university, Chennai	VLSI System	02/01/2015	10.2	Professor	Professor	02/01/2015	Regular
2	Dr. C.Jeyalakshmi	XXXXXXXX84K	Ph.D	Anna University, Chennai	Speech processing	01/07/2016	8.8	Associate Professor	Professor	16/10/2020	Regular
3	Dr. K. Priyadarshini	XXXXXXXX11Q	Ph.D	Karunya Institute of Technology Science	Video Processing	04/06/2018	6.9	Professor	Professor	04/06/2018	Regular
4	Dr. B. Viswanathan	XXXXXXXX18H	Ph.D	Swiss Federal Institute of Technology, Switzerland	Microelectronics/ VLSI	06/12/2018	6.3	Associate Professor	Professor	01/06/2023	Regular
5	Dr. R. Samson Daniel	XXXXXXXX21P	Ph.D	National Institute of Technology, Trichy	Microwave, Antenna design, ANN	25/06/2018	6.8	Assistant Professor	Associate Professor	10/01/2022	Regular
6	Dr. P. Sathees Lingam	XXXXXXXX96F	Ph.D	Anna University	Wireless Sensor Network, Embedded system and IOT	04/03/2022	3	Assistant Professor	Associate Professor	15/06/2023	Regular
7	Dr. T. Muruganantham	XXXXXXXX83K	Ph.D	Annamalai University, Chidambaram	CMOS Analog Filter, ANN	01/06/2011	13.9	Assistant Professor	Associate Professor	02/05/2024	Regular
8	Dr. G. Kalpanadevi	XXXXXXXX05L	Ph.D	Anna University, Chennai	Microwave, Signal Processing	02/11/2022	2.4	Assistant Professor	Associate Professor	01/06/2023	Regular

9	Dr. S. Stephe	XXXXXXXX21E	Ph.D	Anna university, Chennai	Bio Medical Signal Processing	24/03/2023	1.11	Assistant Professor	Assistant Professor		Regular
10	Dr. H. Sudarsan	XXXXXXXX26L	Ph.D	Annamalai University, Chidambaram	Antenna ,Microwave ,MIMO	01/08/2022	2.7	Assistant Professor	Assistant Professor		Regular
11	Dr. V. Brinda	XXXXXXXX88G	Ph.D	Anna University, Chennai	Communication Systems	16/06/2014	10.9	Assistant Professor	Assistant Professor		Regular
12	Dr. M. Vinoth	XXXXXXXX85M	Ph.D	Hindustan Institute Of Technology And Science	Antenna, Microwave, mm Wave, Sub mm Waves	01/03/2022	3	Assistant Professor	Associate Professor	03/06/2024	Regular
13	Mr. R. Balamurugan	XXXXXXXX31N	M.E/M.Tech	Anna university, Chennai	VLSI Design	01/08/2012	12.7	Assistant Professor	Assistant Professor		Regular
14	Mr. P. Muralikrishnan	XXXXXXXX13E	M.E/M.Tech	Anna university, Chennai	VLSI Design	10/06/2013	11.9	Assistant Professor	Assistant Professor		Regular
15	Mr. N. R. Nagarajan	XXXXXXXX97D	M.E/M.Tech	Anna university, Chennai	VLSI Design	10/06/2013	11.9	Assistant Professor	Assistant Professor		Regular
16	Mr. A. Balakumar	XXXXXXXX99B	M.E/M.Tech	BS ABDUR RAHMAN UNIVERSITY	Communication Systems	24/07/2013	11.7	Assistant Professor	Assistant Professor		Regular
17	Mrs. S. Janupriya	XXXXXXXX28D	M.E/M.Tech	Anna university, Chennai	Communication Systems	09/06/2014	10.9	Assistant Professor	Assistant Professor		Regular
18	Ms. N. Radha	XXXXXXXX74D	M.E/M.Tech	Anna university, Chennai	VLSI Design	24/06/2014	10.8	Assistant Professor	Assistant Professor		Regular
19	Mrs. M. Kalaivani	XXXXXXXX47Q	M.E/M.Tech	Anna university, Chennai	Communication Systems	25/02/2015	10	Assistant Professor	Assistant Professor		Regular
20	Mr. S. Syed Husain	XXXXXXXX52R	M.E/M.Tech	Anna university, Chennai	Communication Systems	02/06/2015	9.9	Assistant Professor	Assistant Professor		Regular
21	Mr. K. Vigneshwaran	XXXXXXXX12Q	M.E/M.Tech	Anna university, Chennai	Communication Systems	02/06/2015	9.9	Assistant Professor	Assistant Professor		Regular
22	Mrs. S. Rajapriya	XXXXXXXX96E	M.E/M.Tech	PRIST University	Communication Systems	02/06/2015	9.9	Assistant Professor	Assistant Professor		Regular
23	Mrs. R. Mahima	XXXXXXXX19G	M.E/M.Tech	Sastra university	VLSI Design	03/06/2019	5.9	Assistant Professor	Assistant Professor		Regular
24	Ms. S. Anusuya	XXXXXXXX86P	M.E/M.Tech	Anna University, Chennai	Communication Systems	03/06/2019	5.9	Assistant Professor	Assistant Professor		Regular
25	Mrs. P. Malini	XXXXXXXX41H	M.E/M.Tech	Anna University, Chennai	VLSI Design	03/06/2019	5.9	Assistant Professor	Assistant Professor		Regular
26	Mrs. A. Vidya	XXXXXXXX78P	M.E/M.Tech	Regional campus,Anna university coimbatore	Communication Systems	03/06/2019	5.9	Assistant Professor	Assistant Professor		Regular
27	Mrs. P. Surya	XXXXXXXX91H	M.E/M.Tech	Anna University, Chennai	Communication Systems	15/11/2021	3.4	Assistant Professor	Assistant Professor		Regular
28	Mrs. R. Ramya	XXXXXXXX42J	M.E/M.Tech	PRIST University	Communication Systems	01/09/2022	2.6	Assistant Professor	Assistant Professor		Regular

29	Ms. M. Indhu	XXXXXXXX55L	M.E/M.Tech	Anna University, Chennai	Communication Systems	09/08/2023	1.7	Assistant Professor	Assistant Professor		Regular
30	Mrs. N. Srividhya	XXXXXXXX19R	M.E/M.Tech	Sathyabama University, Chennai	Applied Electronics	09/08/2023	1.7	Assistant Professor	Assistant Professor		Regular
31	Mrs. R. Bagavathiyammal	XXXXXXXX99B	M.E/M.Tech	Anna University, Chennai	Communication Systems	03/11/2020	4.4	Assistant Professor	Assistant Professor		Regular
32	Mr. M. Karthick	XXXXXXXX77P	M.E/M.Tech	Periyar Maniammai University	Communication Systems	30/06/2010	14.8	Lecturer	Assistant Professor		Regular
33	Mrs. J. Roselin Suganthi	XXXXXXXX86C	M.E/M.Tech	Anna University, Chennai	Communication Systems	01/08/2012	12.7	Assistant Professor	Assistant Professor		Regular
34	Dr. J. Jency Rubia	XXXXXXXX65M	Ph.D	Anna University, Chennai	VLSI Design	01/03/2022	1.3	Assistant Professor	Assistant Professor		Regular
35	Dr. U. Surendar	XXXXXXXX42M	Ph.D	Anna University, Chennai	MIMO Antenna	23/04/2014	9.1	Assistant Professor	Assistant Professor		Regular
36	Dr. P. Senthil	XXXXXXXX67N	Ph.D	Anna University, Chennai	VLSI Design	22/03/2022	1.10	Assistant Professor	Assistant Professor		Regular
37	Mrs. P. Muthamizhselvi	XXXXXXXX45H	M.E/M.Tech	Anna University, Chennai	VLSI Design	03/06/2019	4.1	Assistant Professor	Assistant Professor		Regular
38	Ms. M. Meenu	XXXXXXXX88D	M.E/M.Tech	Anna University, Chennai	Communication Systems	14/06/2019	4	Assistant Professor	Assistant Professor		Regular
39	Ms. S. Kaveya	XXXXXXXX69K	M.E/M.Tech	Anna University, Chennai	Applied Electronics	06/03/2019	4.4	Assistant Professor	Assistant Professor		Regular
40	Ms.V. Subhashini	XXXXXXXX32Q	M.E/M.Tech	Anna University, Chennai	Applied Electronics	06/12/2017	5.7	Assistant Professor	Assistant Professor		Regular
41	Mrs. S. Sathya	XXXXXXXX00K	M.E/M.Tech	Anna University, Coimbatore	VLSI Design	01/06/2011	12.11	Assistant Professor	Assistant Professor		Regular
42	Dr. A. Abinaya	XXXXXXXX84E	Ph.D	Anna University, Chennai	VLSI Signal Processing	01/08/2018	4.11	Assistant Professor	Assistant Professor		Regular

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)).

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

Description	CAY(2024-25)	CAYm1 (2023-24)	CAYm2 (2022-23)
UG1.B	122	126	189
UG1.C	126	189	198
UG1.D	189	198	182
<b>UG1: Electronics &amp; Communication Engineering</b>	<b>437</b>	<b>513</b>	<b>569</b>
PG1.A	12	12	12
PG1.B	12	12	18
<b>PG1: Communication Systems</b>	<b>24</b>	<b>24</b>	<b>30</b>
DS=Total no. of students in all UG and PG programs in the Department	461	537	599
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)	<b>S1= 461</b>	<b>S2= 537</b>	<b>S3= 599</b>
DF=Total no. of faculty members in the Department	33	34	37
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)	<b>F1= 33</b>	<b>F2= 34</b>	<b>F3= 37</b>
FF=The faculty members in F who have a 100% teaching load in the first-year courses	2	2	2
Student Faculty Ratio (SFR)=S/(F-FF)	<b>SFR1= 14.87</b>	<b>SFR2= 16.78</b>	<b>SFR3= 17.11</b>
Average SFR for 3 years	<b>SFR= 16.25</b>		

**C3. Faculty Qualification**

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

Table No.C3.1: Faculty qualification.

Year	X	Y	RF	FQ = $2.5 \times [(10X + 4Y) / RF]$
2024-25(CAY)	12	21	23.00	22.17
2023-24(CAYm1)	10	24	26.00	18.85
2022-23(CAYm2)	10	27	29.00	17.93

**C4. Faculty Cadre Proportion**

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

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

Year	Professors		Associate Professors		Assistant Professors	
	Required RF1	Available AF1	Required RF2	Available AF1	Required RF3	Available AF3
2024-25	2.00	4.00	5.00	5.00	15.00	24.00
2023-24	2.00	4.00	5.00	3.00	17.00	27.00
2022-23	3.00	3.00	6.00	2.00	19.00	32.00
Average	RF1=2.33	AF1=3.67	RF2=5.33	AF2=3.33	RF2=17.00	AF2=27.67

**C5. Visiting/Adjunct Faculty/Professor of Practice**

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

(CAYm1)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. A. Vinoth kumar	Embedded Programmer	Mercedes Benz Ltd, Bangalore	Embedded Programming	80.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. A. Vinoth kumar	Embedded Programmer	Mercedes Benz Ltd, Bangalore	Embedded Programming	160.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. B. Navaneetha krishnan	Senior Engineer	Vaken technologies, Chennai	OOPS and Data Structures	80.00

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	24	19	38
2	No. of peer reviewed conference papers published	31	17	1
3	No. of books/book chapters published	1	1	0

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.M.Maheswari Dr.C.Jeyalakshmi, Dr.T.Muruganatham	Mr.S.Sudharsan	ECE	Solar power bank	MSME Startup	3 YEARS	13.50
Dr.C.Jeyalakshmi	Mr.A.Balakumar	ECE	Design of IoT based Smart CARELINK - Hospital Health Care Management and Monitoring System	IEI	1 YEAR	0.65
Dr.G.Kalpanadevi	NA	ECE	Dynamic Health Monitoring: Pioneering Early Disease Detection Through Motion Analysis	IEI	9 MONTHS	0.32
Dr.B.Viswanathan	NA	ECE	Smart Town/City - Smart Toilet system	Niral-Thiruvizha - TN	6 MONTHS	0.10
Dr.B.Viswanathan	NA	ECE	Waste Management	Niral-Thiruvizha - TN	6 MONTHS	0.10
Dr.M.Maheswari	Dr.C.Jayalakshmi	ECE	FDP on VLSI chip design from Microscale to Nanoscale devices and beyond	AICTE-ATAL	6 DAYS	3.50
Dr. K. Priyadarshin	NA	ECE	Training Program on Human Rights	NHRC	1 DAY	0.68
						Amount received (Rs.):18.85

(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. K. Priyadarshin	NA	ECE	"Actions@75 - National Education Policy"	ICSSR	1 DAY	2.00
						Amount received (Rs.):2.00

(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.C.Jeyalakshmi	NA	ECE	Detection of varicose veins of lower extremities based on vascular endothelial cell inflammation images using fuzzy c means approach	TNSCST	3 MONTHS	0.08
Dr.C.Jeyalakshmi	NA	ECE	Induction/Refresher Program on Blockchain Technology in Health Care	AICTE-ISTE	7 DAYS	0.93
						Amount received (Rs.):1.01

**Total Amount (Lacs) Received for the Past 3 Years: 21.86**

**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.B.Viswanathan	NA	ECE	VLSI Design	PMKVY	10 MONTHS	3.11
Mr. A. Balakumar	NA	ECE	IoT Hardware Analysis	IoT Hardware Analysis	8 MONTHS	1.52
						Amount received (Rs.):4.63

(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. M.vinoth	NA	ECE	Wearable annular antenna for wireless body area network applications	Power Integrated solutions	2 MONTHS	0.15
Dr.P.Senthil	NA	ECE	VHDL porting	Logimentor Srl	3 MONTHS	0.41
						Amount received (Rs.):0.56

(CAYm3)

**Total amount (Lacs) received for the past 3 years: 5.19**

**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
Mr.N.R.Nagarajan	Optimizing Chemical sensing Performance	5 MONTHS	0.08	0.08	Research paper published
Dr.M.Vinoth	THZ Microstrip antenna for tera bit wireless Local Area Networks	5 MONTHS	0.08	0.08	Fabrication and Testing
Mr.K.Vigneswaran	Deep Force: A Deep Reinforcement Learning Approach	5 MONTHS	0.08	0.08	Research paper published
Dr.R.Samson Daniel	Artificial Neural network based multiband	9 MONTHS	0.10	0.10	Fabrication and Testing
Mrs.J.Roselin Suganthi	pattern recognition for EMG based forearm orientation	9 MONTHS	0.10	0.10	Research paper published
Mr.R. Balamurugan	performance analysis of microstrip patch antenna	3 MONTHS	0.05	0.05	Fabrication and Testing
Mr.R. Balamurugan	security based low density parity check encoder for 5G communication	5 MONTHS	0.08	0.08	Research paper published
Dr.K.Priyadarshini	synthesis and spectral characterization	5 MONTHS	0.15	0.15	Research paper published
Dr.K.Priyadarshini	integrating relational and sequential information for enhanced detection	9 MONTHS	0.08	0.08	Research paper published
Dr.K.Priyadarshini	a cloud connected digital system for Type 1 diabetes prediction	5 MONTHS	0.08	0.08	Research paper published
			Amount received (Rs.): 0.88		

(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
Mr.T.Muruganantham	Efficient Design of CMOS Bi-Quad BPF	9 MONTHS	0.09	0.09	Research paper published
Dr.U.Surendar	A compact Phased Array Antenna for 5G MIMO Application	9 MONTHS	0.09	0.09	Fabrication and Testing
Dr.K.Priyadarshini	Hybrid RNN-FFBPNN Optimized with Glowworm Swarm Algorithm	9 MONTHS	0.10	0.10	Research paper published
Mr.A.Balakumar	Ensemble classifier fostered detection	9 MONTHS	0.10	0.10	Research paper published
Mr.P.Murailkrishnan	Reinforcement of nanocellulose as green agent	9 MONTHS	0.10	0.10	Research paper published
Dr.P.senthil	Area-latency efficient floating-point adder	10 MONTHS	0.10	0.10	Research paper published
Mr. S. Syedhusain	Creating Alert Messages Based on Wild Animal Activity	1.2 YEARS	0.15	0.15	Research paper published
Mr. R. BALAMURUGAN	IoT based tracking cattle health monitoring	9 MONTHS	0.09	0.09	Research paper published
Mr. R. BALAMURUGAN	Design of high efficient low power static logic circuit using SG FinFET	6 MONTHS	0.08	0.08	Research paper published
Dr.JencyRubia J	Novel rare-earth Eu and La co-doped ZnO nanoparticles synthesized via co-precipitation	9 MONTHS	0.10	0.10	Fabrication and Testing
Dr.JencyRubia J	An adaptive transformer model for anomaly detection	6 MONTHS	0.08	0.08	Fabrication and Testing
Ms.N.Radha	An optimal channel coding scheme for high-speed	6 MONTHS	0.10	0.10	Research paper published
Dr.R.Samson Daniel	Half mode rectangular SIW slotted antenna for multiband operations	10 MONTHS	0.10	0.10	Fabrication and Testing
Dr.R.Samson Daniel	Dual –band SIW cavity backed antenna	9 MONTHS	0.09	0.09	Fabrication and Testing
Dr. M.Vinoth	Utilization of Bioinorganic Nanodrugs and Nanomaterials	10 MONTHS	0.10	0.10	Research paper published
Dr. M.Vinoth	Deep reinforcement learning for comprehensive route optimization	10 MONTHS	0.10	0.10	Research paper published
Dr. C. Jeyalakshmi	Computer vision based human fall detection	10 MONTHS	0.10	0.10	Research paper published
Dr. C. Jeyalakshmi	TTS System for Deafened and Vocally impaired persons	10 MONTHS	0.10	0.10	Research paper published
Dr. C. Jeyalakshmi	Robust hearing-impaired Speaker recognition from speech	7 MONTHS	0.07	0.07	Research paper published
Dr. M. Maheswari	Ultrasonically synthesized MgZnO nanoparticles for enhanced piezo-photocatalysis	1.2 YEARS	0.15	0.15	Research paper published
Dr. M. Maheswari	Fabrication of n-CeZnO/p-Si heterojunction diodes	10 MONTHS	0.10	0.10	Research paper published
Dr. M. Maheswari	Numerical analysis on effect of graphene on biosensing	10 MONTHS	0.10	0.10	Research paper published
Ms.N.Radha	An optimal channel coding scheme for high-speed data communication	6 MONTHS	0.08	0.08	Research paper published
			Amount received (Rs.): 2.27		

(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
Mr.N.R.Nagarajan	Intrusion detection system for big data analytics in IOT environment	9 MONTHS	0.09	0.09	Published in SCIE/Scopus Indexed Journals
Mrs.J.Roselin Suganthi	Fuzzy logic for underground mining method selection	9 MONTHS	0.09	0.09	Published in SCIE/Scopus Indexed Journals
Mrs.V.Brinda	Identifying Malicious Secondary user presence within primary user range in cognitive radio networks	9 MONTHS	0.09	0.09	Published in SCIE/Scopus Indexed Journals
Ms.S.Rajapriya	Machine learning based pruning technique	9 MONTHS	0.09	0.09	Published in SCIE/Scopus Indexed Journals
Mr.K.Vigneswaran	A novel approach based on hybrid algorithm	10 MONTHS	0.11	0.11	Published in SCIE/Scopus Indexed Journals
Mr.M.Karthick	Block chain enabled light weight cryptography	10 MONTHS	0.11	0.11	Published in SCIE/Scopus Indexed Journals
Mr.P.Muralikrishnan	An enhanced routing and lifetime performance	10 MONTHS	0.11	0.11	Published in SCIE/Scopus Indexed Journals
Mr.T.Muruganantham	Deep learning based autonomous Transport system	1.2 YEARS	0.12	0.12	Published in SCIE/Scopus Indexed Journals
Ms.S.Janupriya	Pattern recognition of modulation signal	1 YEAR	0.14	0.14	Published in SCIE/Scopus Indexed Journals
Mr.R.Balamurugan	A novel method to improve computational and classification performance	6 MONTHS	0.10	0.10	Published in SCIE/Scopus Indexed Journals
Mr.R.Balamurugan	Effects of novel material field effect transistor for heterogeneous energy	9 MONTHS	0.10	0.10	Published in SCIE/Scopus Indexed Journals
Mr.U.Surendar	Design of low cost miniaturized meta material based circular split ring	9 MONTHS	0.09	0.09	Fabrication and Testing
Mr.U.Surendar	A Dual Polarized Meta material Spiral MIMO antenna for 5G applications	9 MONTHS	0.09	0.09	Fabrication and Testing
Mr.U.Surendar	A compact metamaterial based open ended CPW band pass filter for wireless applications	9 MONTHS	0.09	0.09	Fabrication and Testing
Dr.R.Samson daniel	A CPW fed rectangular nested loop antenna	10 Months	0.10	0.10	Fabrication and Testing
Dr.R.Samson daniel	planar SIW cavity backed antenna loaded with slots	1.2 YEAR	0.10	0.10	Fabrication and Testing
Dr.R.Samson daniel	multiband substrate integrated waveguide antenna	6 MONTHS	0.12	0.12	Fabrication and Testing
Dr.B.Viswanathan	A reversible bi state joint imply optical logic gate using photonic crystals	9 MONTHS	0.12	0.12	Published in SCIE/Scopus Indexed Journals
Dr.B.Viswanathan	Design of 6 channel optical demultiplexer	9 MONTHS	0.20	0.20	Published in SCIE/Scopus Indexed Journals
Dr.M.Maheswari	HEVC Video quality enhancement using deep learning	9 MONTHS	0.10	0.10	Published in SCIE/Scopus Indexed Journals
Dr.M.Maheswari	an automatic query expansion based on hybrid CMO COOT Algorithm	9 MONTHS	0.10	0.10	Published in SCIE/Scopus Indexed Journals
Dr.M.Maheswari	Heuristic analysis of multiplier less desensitized half band decimation	9 MONTHS	0.10	0.10	Published in SCIE/Scopus Indexed Journals
Dr.M.Maheswari	hybrid grass honey bee optimization multi kernel extreme learning classifier	9 MONTHS	0.10	0.10	Published in SCIE/Scopus Indexed Journals
Dr.C.Jeyalakshmi	Dynamic customer churn prediction strategy for business intelligence	9 MONTHS	0.20	0.20	Published in SCIE/Scopus Indexed Journals
Dr.C.Jeyalakshmi	AI Based traffic flow prediction model	9 MONTHS	0.16	0.16	Published in SCIE/Scopus I
Dr.K.Priyadarshini	Hybridization of meta heuristic-based energy efficient scheduling	9 MONTHS	0.20	0.20	Published in SCIE/Scopus Indexed Journals
Dr.K.Priyadarshini	Intelligent feature selection with deep learning	9 MONTHS	0.20	0.20	Published in SCIE/Scopus Indexed Journals
			Amount received (Rs.): 3.22		

Total amount (Lacs) received for the past 3 years : 6.37

## 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	Electric Circuits and Electronic Devices Lab	30	1. Cathode Ray Oscilloscope – 09 No's 2. Function Generator – 15 No's 3. Dual Regulated Power Supply	1. BE / 1st year	Mrs. P. Vijaya	Technical Assi	Bachelor of Sc
2	RF System Design & Optical Communication Lab	30	1. Fiber Optic Analog Transmitter & Receiver Trainer Kit – 01 No's 2. Optical Fiber Transmission Trainer Kit	B.E / 4th year /	Mrs. M. Brindh	Technical Assi	Diploma in Ele
3	Microprocessor and Microcontroller Lab	30	1. Personal Computer-LENOVO (Intel core i5 9th gen-9400Processor) 2. 8085 & 8086 Trainer Kit	1. BE / 3rd year	Mrs. S. Meena	Technical Assi	Post Graduate
4	Analog Integrated Circuits / Analog and Digital	30	1. Personal Computer-LENOVO (Intel core i5 9th gen-9400Processor) 2. 8085 & 8086 Trainer Kit	1. B.E / 2nd year	Mrs. M. Brindh	Technical Assi	Diploma in Ele
5	Programming Lab	30	1. Personal Computer- LENOVO (Intel Core i5 9th gen-9400 Processor) 2. 8085 & 8086 Trainer Kit	BE / 1st year / E	Mrs. S. Meena	Technical Assi	Post Graduate
6	Digital Signal Processing / VLSI Lab	30	1. a) Personal Computer-DELL (Processor 12Th Gen Intel® core™ i5-12500) 2. 8085 & 8086 Trainer Kit	1. BE / 2nd year	Mrs. L. Ananth	Technical Assi	Bachelor of Ce
7	Embedded Systems / Communication Networks	30	1. Personal Computer- LENOVO (RAM-8GB, Processor Intel® core™ i5-12500) 2. 8085 & 8086 Trainer Kit	1. BE / 2nd year	Mrs. L. Ananth	Technical Assi	Bachelor of Ce
8	Analog and Digital Circuits / Digital Electronics Lab	30	1. Personal Computer-LENOVO (Intel core i5 9th gen-9400Processor) 2. 8085 & 8086 Trainer Kit	1. BE / 1st year	Mrs. P. Vijaya	Technical Assi	Bachelor of Sc

### D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	ECED / EC LAB	1. General Rules of Conduct in Laboratories are displayed. 2. First aid box, Fire extinguisher is kept in the laboratory. 3. Periodical servicing of the lab equipment. 4. Calibration of electrical equipment is done frequently 5. MCB switches are available for protection against overload or short circuit 6. Timetable and list of equipment's available inside the lab are also displayed in notice board 7. Maintain a clean and organized laboratory. 8. Avoiding the use of cell phones. 9. Avoiding carry bag inside the laboratory 10. Instructed to wear shoes properly to avoid electric shock 11. Sign the log-out register before leaving the lab.
2	RF & System Design Lab	1. General Rules of Conduct in Laboratories are displayed. 2. First aid box, Fire extinguisher is kept in the laboratory. 3. Periodical servicing of the lab equipment. 4. Calibration of electrical equipment is done frequently 5. MCB switches are available for protection against overload or short circuit 6. Timetable and list of equipment's available inside the lab are also displayed in notice board 7. Maintain a clean and organized laboratory. 8. Avoiding the use of cell phones. 9. Avoiding carry bag inside the laboratory 10. Instructed to wear shoes properly to avoid electric shock 11. Sign the log-out register before leaving the lab.

3	MPMC lab	<p>1. General Rules of Conduct in Laboratories are displayed. 2. First aid box, Fire extinguisher is kept in the laboratory. 3. Periodical servicing of the lab equipment. 4. Calibration of electrical equipment is done frequently 5. MCB switches are available for protection against overload or short circuit 6. Timetable and list of equipment's available inside the lab are also displayed in notice board 7. Maintain a clean and organized laboratory. 8. Avoiding the use of cell phones. 9. Avoiding carry bag inside the laboratory 10. Permission denied for pen drives. 11. Sign the log-out register before leaving the lab. 12. The student must check the computer unit and its peripherals attached before using it and turned off properly before leaving the lab. The student must immediately inform the instructor if there's any defect, error or damage observed at the computer (hardware/software).</p>
4	AIC / ADC lab	<p>1. General Rules of Conduct in Laboratories are displayed. 2. First aid box, Fire extinguisher is kept in the laboratory. 3. Periodical servicing of the lab equipment. 4. Calibration of electrical equipment is done frequently 5. MCB switches are available for protection against overload or short circuit 6. Timetable and list of equipment's available inside the lab are also displayed in notice board 7. Maintain a clean and organized laboratory. 8. Avoiding the use of cell phones. 9. Avoiding carry bag inside the laboratory 10. Permission denied for pen drives. 11. Sign the log-out register before leaving the lab. 12. The student must check the computer unit and its peripherals attached before using it and turned off properly before leaving the lab. The student must immediately inform the instructor if there's any defect, error or damage observed at the computer (hardware/software).</p>
5	Embedded Systems with AI lab.	<p>1. General Rules of Conduct in Laboratories are displayed. 2. First aid box, Fire extinguisher is kept in the laboratory. 3. Periodical servicing of the lab equipment. 4. Calibration of electrical equipment is done frequently 5. MCB switches are available for protection against overload or short circuit 6. Timetable and list of equipment's available inside the lab are also displayed in notice board 7. Maintain a clean and organized laboratory. 8. Avoiding the use of cell phones. 1. General Rules of Conduct in Laboratories are displayed. 2. First aid box, Fire extinguisher is kept in the laboratory. 3. Periodical servicing of the lab equipment. 4. Calibration of electrical equipment is done frequently 5. MCB switches are available for protection against overload or short circuit 6. Timetable and list of equipment's available inside the lab are also displayed in notice board 7. Maintain a clean and organized laboratory. 8. Avoiding the use of cell phones. 9. Avoiding carry bag inside the laboratory 10. Permission denied for pen drives. 11. Sign the log-out register before leaving the lab. 12. The student must check the computer unit and its peripherals attached before using it and turned off properly before leaving the lab. The student must immediately inform the instructor if there's any defect, error or damage observed at the computer (hardware/software).</p>
6	DSP / VLSI	<p>1. General Rules of Conduct in Laboratories are displayed. 2. First aid box, Fire extinguisher is kept in the laboratory. 3. Periodical servicing of the lab equipment. 4. Calibration of electrical equipment is done frequently 5. MCB switches are available for protection against overload or short circuit 6. Timetable and list of equipment's available inside the lab are also displayed in notice board 7. Maintain a clean and organized laboratory. 8. Avoiding the use of cell phones. 9. Avoiding carry bag inside the laboratory 10. Permission denied for pen drives. 11. Sign the log-out register before leaving the lab. 12. The student must check the computer unit and its peripherals attached before using it and turned off properly before leaving the lab. The student must immediately inform the instructor if there's any defect, error or damage observed at the computer (hardware/software).</p>
7	Embedded Systems / CN Lab	<p>1. General Rules of Conduct in Laboratories are displayed. 2. First aid box, Fire extinguisher is kept in the laboratory. 3. Periodical servicing of the lab equipment. 4. Calibration of electrical equipment is done frequently 5. MCB switches are available for protection against overload or short circuit 6. Timetable and list of equipment's available inside the lab are also displayed in notice board 7. Maintain a clean and organized laboratory. 8. Avoiding the use of cell phones. 9. Avoiding carry bag inside the laboratory 10. Permission denied for pen drives. 11. Sign the log-out register before leaving the lab. 12. The student must check the computer unit and its peripherals attached before using it and turned off properly before leaving the lab. The student must immediately inform the instructor if there's any defect, error or damage observed at the computer (hardware/software).</p>

8	ADC / LIC	<p>1. General Rules of Conduct in Laboratories are displayed. 2. First aid box, Fire extinguisher is kept in the laboratory. 3. Periodical servicing of the lab equipment. 4. Calibration of electrical equipment is done frequently 5. MCB switches are available for protection against overload or short circuit 6. Timetable and list of equipment's available inside the lab are also displayed in notice board 7. Maintain a clean and organized laboratory. 8. Avoiding the use of cell phones. 9. Avoiding carry bag inside the laboratory 10. Permission denied for pen drives. 11. Sign the log-out register before leaving the lab. 12. The student must check the computer unit and its peripherals attached before using it and turned off properly before leaving the lab. The student must immediately inform the instructor if there's any defect, error or damage observed at the computer (hardware/software).</p>
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**D3. Project Laboratory/Research Laboratory**

The department has 5 state of the art laboratories exclusively for research and projects in addition to the 8 laboratories which are meant for curriculum. These additional laboratories are used for enhancing the learning experience in laboratories, research and Innovation of the students. These labs are sufficiently equipped to carry out BE, M. Tech projects and Ph.D. research work. Students and faculty have published many research papers and patents by working in these labs. UG students and research scholars are assigned each lab depending on domain they work.

The additional laboratories are:

1. Project Laboratory
2. Research and Development Laboratory – I
3. Research and Development Laboratory – II
4. AICTE MODROB funded advanced VLSI Laboratory (Centre of Excellence in VLSI)
5. Embedded Systems with AI Laboratory (Centre of Excellence in Embedded systems and AI)

Department of Electronics and Communication Engineering has established “**AICTE MODROB funded advanced VLSI Laboratory**” by receiving fund of Rs. 10,40,000 from AICTE **under MODROB scheme**.

**Embedded Systems with AI Laboratory**” tie up with **DigiToad Technologies Pvt Ltd** as **Centres of Excellence (CoE)** in various emerging technologies for the benefit of students. The CoEs are the lab facilities for students to develop practical skills in emerging technologies of ‘content beyond syllabus’ and become more industry ready to join the industry working on emerging technologies.

#### 7.5.1: LIST OF PROJECT LABORATORY / RESEARCH LABORATORY / CETNRE OF EXCELLENCE

##### 7.5.1 (A) PROJECT LABORATORY

**Total Cost of the Lab.:** Rs. **5,26,499.98**

**Area:** **102.92 Sq. m**

Project laboratory facility is built in our department where students and researchers can conduct hands-on projects, experiments, and research activities, often with access to specialized equipment and resources. By the utilization of project laboratories, students are able to build their own project and participate in various hackathon’s etc.

**Table No. 7. 5. 1: Utilization of Project laboratory**

Sl. No.	Laboratory	Utilization	Laboratory Incharge	Technical Staff
1	<b>PROJECT Laboratory</b>	Hardware & Software	Mr. K. Vigneswararan	Mrs. P. Vijayalakshmi

##### Major Equipment’s:

1. ASLK Pro kit – 04 No’s
2. MSP430 G2 Launch pad – 15 No’s
3. CC110L Booster pack – 06 No’s
4. TIVA Launch pad – 10 No’s
5. Sense hub booster pack – 02 No’s
6. Simple link Wi-Fi CC3100 Booster pack – 04 No’s
7. Simple link Wi-Fi CC2650/CC2640 wireless Launch pad kit – 02 No’s
8. Simple link Wi-Fi CC3200 launch pad – 04 No’s
9. MSP430 5529 Launch pad – 04 No’s
10. MSP430 5969 Launch pad – 04 No’s
11. TIVA development board – 02 No’s
12. TI RSLK – 01 No’s
13. OMAPL138 LCDK – 01 No’s

##### Software:

1. Ez RF2500 MSP430 wireless development tool – 02 User’s



**Fig. 7.13 Project Laboratory**

##### Outcome of the Lab.:

The outcome of a project laboratory, whether academic or research-oriented, is a multifaceted result encompassing practical skill, knowledge acquisition, and the development of innovative solutions, often culminating in a tangible product or report. By utilizing this laboratory, the students have done their project with the titles listed:

**Table No. 7. 5. 2: Sample projects carried out in Project lab.**

S.No	Name of the students	Title of the Project	Year / Dept.	Research area
1	Lakshanya R K Malarvizhi M Mohana Priya M Nasma Jasmine	Optimal energy efficient in ultra-dense networks through enhanced device to device communication and small base station	IV / ECE	Wireless Communication
2	Sanjay B Diwakar M Sahith Afridi S Palaniyappan A	Energy harvesting algorithms comparison for surface-based network and under water network	IV / ECE	Wireless Communication
3	Ashokumar S Bahirathan S Dhanushkumar R Hariharan S	ML Based Intelligent accident detection and notification system in IOT Network	IV / ECE	Embedded systems / IOT
4	Nachiappan S Rajkumar K Ramanathan PL Rushil Krishna S	Animal detection and repellent system for crop protection	IV / ECE	Embedded Systems / IOT
5	Christy Diana D Harini E Harini S	Image processing in underwater wireless sensors	IV / ECE	Wireless communication
6	Arunkumar M Avinesh V Dharaneesh N Hariprasanth R	Road Extraction from satellite images using attention assisted unit	IV / ECE	Wireless Communication
7	Sanjay Kumar R SivanGanam M Srihari Prasath M Yogaraj P	A hybrid deep learning model for accurate fault diagnosis in gear boxes through vibration analysis	IV / ECE	Digital Signal Processing
8	Monika Mercy J Krithika H Maureen Mandy M Meithrevi S	An efficient equalizer for B5G communication system	IV / ECE	Wireless Communication

### 7.5.1 (B) RESEARCH LABORATORY

#### Research Laboratory – I:

Total Cost of the Lab.: Rs. 23,87,499.84

Area: 64.154 Sq. m

Research laboratory – 1 is established in our department for conducting various scientific research and experiments, aiming for new discoveries and advancements in a specific field. By the utilization of research laboratories, students and researchers are able to improve their research skills.

Table No. 7. 5. 3: Utilization of Research and Development laboratory - I

SI. No.	Laboratory	Utilization	Laboratory Incharge	Technical Staff
1	R&D - I Lab.	Hardware & Software	Dr. Samson Danial	Mrs. J. Premalatha

**Major Equipment's:**

1. Computer (Lenovo – M72E Desktop) – 20 No's
2. Computer (HP – 208G1) – 05 No's
3. ESS – NI – LVHWB – Lab VIEW – NI MyDAQ Add-on Kit – 10 No's
4. ESS – NI – LVHWB – Lab VIEW – NI MyRIO FPGA based Test System – 10 Units

**Software's:**

1. Lab VIEW – 25 users
2. Advanced Design System (ADS) – 5 User's

**Table No. 7. 5. 4: Sample research carried out in R&D lab. - I**

SI.No.	Name of the Scholar	Year of Registration	Name of the Supervisor	FT / PT	Title of the Research	Status
1	S. Rajapriya	2021	Dr. R. Samson Daniel	PT	Advancements in Performance Evaluation of Planar Antennas for WLAN Applications	Thesis Submitted
2	K. Vigneshwaran	2021	Dr. R. Samson Daniel	FT	Meta-absorber for THz applications	Pursuing
3	G.A. Nivedaa	2021	Dr. R. Samson Daniel	PT	Planar antenna for biomedical applications	Pursuing
4	S. Janu Priya	2022	Dr. R. Samson Daniel	PT	ACS-fed antenna design	Pursuing
5	S. Anusuya	2022	Dr. R. Samson Daniel	PT	SIW antenna design	Pursuing

**Fig. 7.14 Research and Development Lab. – I****Research Laboratory – II:**

Research laboratory – II is established in our department for conducting various scientific research and experiments, aiming for new discoveries and advancements in a specific field. By the utilization of research laboratories, students and researchers are able to improve their research skills.

**Total Cost of the Lab.: 30,50,824.80 lakh's**

**Area: 93.04 Sq. m**

**Faculty Incharge: Dr. C. Jeyalakshmi**

**Table No. 7. 5. 5: Utilization of Research and Development laboratory - II**

SI. No.	Laboratory	Utilization	Laboratory Incharge	Technical Staff
1	<b>R&amp;D - II Lab</b>	Hardware & Software	Dr. C. Jeyalakshmi	Mrs. L. Ananthi

**Major Equipment:**

1. Personal Computer (HP – 208G1) – 71 No's
2. Personal Computer (Lenovo - M72E Desktop) – 1 No's
3. ARM (LPC2378) development board – 3 No's
4. ARM (LPC1768) development board – 10 No's

5. Arduno Kit – 4 No's
6. Rasperi PI Kit – 2 No's

**Software:**

1. MATLAB – 15 User's
2. CADENCE (180nm Technology) – 20 User's
3. Network Simulator 2 – 15 User's
4. AARON – DEA – 10 User's

**Table No. 7. 5. 6: Sample research carried out in R&D lab. - II**

Sl.No.	Name of the Scholar	Year of Registration	Name of the Supervisor	FT / PT	Title of the Research	Status
1	Mrs. M. Kalaivani	2021	Dr. C. Jeyalakshmi	PT	Diversity techniques to improve bit error rate for 5G	Pursuing
2	G. Bhavani	2021	Dr. C. Jeyalakshmi	PT	Optimization using Machine learning	Pursuing
3	Mrs. J. Aruna	2018	Dr. C. Jeyalakshmi	FT	Activity based motion estimation	Completed
4	Mrs. Padmasree Balakrishnan	2021	Dr. C. Jeyalakshmi	PT	Multimodal Emotion Recognition Using Deep Learning Techniques	Pursuing
5	Mr. Sivasakthi	2021	Dr. C. Jeyalakshmi	FT	A study on the role of Block chain and machine learning in 5G communications and networking systems	Pursuing
6	Mrs. S. Saranya	2019	Dr. C. Jeyalakshmi	PT	Recommender system	Pursuing
7	Ms. Ramya R	2023	Dr. C. Jeyalakshmi	PT	Hyperledger dfabric based framwork for open RAN with Enhanced privacy and security in 5G Networks	Pursuing
8	Mrs. Devapriya S	2023	Dr. C. Jeyalakshmi	PT	Content based medical image Annotation System (CBIAS) using deep larning Techniques	Pursuing
9	Mrs. K. Revathi	2023	Dr. C. Jeyalakshmi	PT	Outlook of the sustainable agri food supply chain network management	Pursuing

10	Mrs. M. Subashree	2023	Dr. C. Jeyalakshmi	PT	A hybrid neural network model for brain tumor classification using MRI image	Pursuing
11	Mrs. Sheeba	2017	Dr. M. Maheswari	PT	Quality enhancement for HEVC compressed videos	Completed
12	Mrs. T. Shanmuga sundari	2022	Dr. M. Maheswari	FT	Detection of disease using tongue image	Pursuing



Fig. 7.15 Research and Development Lab. - II

#### 7.5.1 (C) CENTRE OF EXCELLENCE

Centre of Excellence" (CoE) is a specialized unit or program that focuses on a specific area of expertise, providing advanced training, research, and industry collaboration to enhance student skills and knowledge in that field.

**Total Cost of the Lab.:** Rs. 2,982,295.58

Table No. 7. 5. 7: Utilization of Centre of Excellence lab.

SI. No.	Laboratory	Utilization	Laboratory Incharge	Technical Staff
1	<b>AICTE Sponsored MODROB ADVANCED VLSI LAB</b>	Hardware & Software	Ms. N. Radha	Mrs. L. Ananthi
2	<b>Embedded Systems with AI lab.</b>	Hardware & Software	Dr. R. Samson Daniel	Mrs. S. Meena

Fig. 7.16 Advanced VLSI Lab.

#### Major Equipment:

1. Personal Computer (HP 280 Pro G8 Microtower PC Desktop) – 25 No's
2. Xilinx Zynq Ultrascale+ MPSOC ZCU104 Kit – 01 No's
3. Xilinx Kintex 7 ZCU104 Kit – 01 No's
4. Xilinx Zynq – 7000 All Programmable SOC ZC702 Evaluation Kit – 01 No's
5. Zedboard Zynq – 7000 ARM / FPGA Soc Development Board – 02 No's
6. Genesys 2 kintex 7 FPGA Development Board – 02 No's
7. Zybo Z7 – 20+ SDSOC Kit – 08 No's
8. Nexys Video – 02 No's
9. ST Microelectronics Embedded Artificial Intelligence Kit – 01 No's

#### Software:

1. Xilinx VIVADO software – 25 User's



**Fig. 7.17 Advanced VLSI Lab.**

**Table No. 7. 5. 8: Various research carried out in Advanced VLSI lab.**

SI.No.	Name of the Scholar	Year of Registration	Name of the Supervisor	FT / PT	Title of the Research	Status
1	Mrs. A. Abinaya	2018	Dr. M. Maheswari	PT	Design and analysis of Multiplierless Decimation filter for Digital down converter in Multistandard wireless applications	Completed
2	Mr. Saravanan	2016	Dr. M. Maheswari	PT	Investigation on Doping Enhanced piezo-photoelectronic characteristics of ZnO nanostructures.	Completed
3	Mr. N. R. Nagarajan	2018	Dr. M. Maheswari	PT	Design and analysis of optimized filter architecture in UFMC for M2M	Pursuing
4	Ms. N. Radha	2019	Dr. M. Maheswari	PT		Thesis Submitted
5	Mr. R. Balamurugan	2021	Dr. M. Maheswari	PT	A novel approach in 5G cellular standard to enhance data rate using channel coding techniques.	Pursuing
6	Ms. R. Mahima	2021	Dr. M. Maheswari	PT	Implementation of deep neural network architecture	Pursuing
7	Mr.P.Muralikrishnan	2021	Dr. M. Maheswari	PT	A novel approach for low power binary weighted convolutional neural networks architecture for embedded applications	Pursuing
8	Ms. P. Malini	2022	Dr. M. Maheswari	PT	Design and implementation of reconfigurable spiking neural network and synapse circuit for neuromorphic computing	Pursuing

**Table No. 7. 5. 9: Various research carried out in Embedded Systems with AI lab.**

SI. No.	Name of the Scholar	Year of Registration	Name of the Supervisor	FT / PT	Title of the Research	Status
1	Mr. S. Syed Husain	2023	Dr. M. Maheswari	PT	Deep Learning based analysis of security attacks in hierarchical based Sensor Network	Pursuing
2	Mrs. G. Surya	2023	Dr. M. Maheswari	PT	Animal species classification using machine learning techniques	Pursuing

## 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)	660	33	33	18	91
2023-24(CAYm1)	660	33	32	24	92
2024-25(CAY)	720	36	34	24	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 2024-25	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	Budgeted in 2021-22	Actual Expenses in 2021-22 till
Infrastructure Built-Up	78.75	66.98	80.00	75.26	35.20	33.87	61.51	58.59
Library	23.89	23.02	21.50	20.50	29.15	27.73	6.29	5.99
Laboratory equipment	75.46	71.87	150.00	142.81	221.60	211.05	39.50	37.23
Teaching and non-teaching staff salary	1138.66	1110.01	1129.30	1075.53	960.00	915.11	706.00	672.35
Outreach Programs	0.78	0.75	0.60	0.47	0.54	0.44	0.53	0.42
R&D	10.86	10.35	59.57	56.74	16.60	15.82	8.80	8.46
Training, Placement and Industry	205.28	195.51	126.56	120.54	175.00	168.08	77.50	73.23
SDGs	4.30	3.44	2.60	2.47	5.25	4.46	2.70	2.50
Entrepreneurship	0.70	0.64	0.50	0.38	0.50	0.45	0.70	0.37
Others, specify	978.45	931.86	754.10	721.19	904.10	882.69	580.00	552.44
<b>Total</b>	<b>2517.13</b>	<b>2414.43</b>	<b>2324.73</b>	<b>2215.89</b>	<b>2347.94</b>	<b>2259.70</b>	<b>1483.53</b>	<b>1411.58</b>

### 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 2024-25	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	Budgeted in 2021-22	Actual Expenses in 2021-22 till
Laboratory equipment	45.96	45.94	20.30	20.20	7.43	7.41	14.75	14.73
Software	2.94	2.91	1.63	1.60	0.31	0.30	0.47	0.46
SDGs	1.19	1.16	0.79	0.77	0.69	0.68	0.02	0.02

Support for faculty development	1.26	1.24	1.28	1.21	0.29	0.28	0.30	0.29
R & D	1.70	1.60	2.30	2.10	0.73	0.72	4.50	4.34
Industrial Training, Industry expert,	0.65	0.58	0.68	0.64	1.00	0.95	0.02	0.01
IEI events, Association	0.09	0.08	0.11	0.10	0.09	0.08	0.02	0.01
<b>Total</b>	<b>53.79</b>	<b>53.51</b>	<b>27.09</b>	<b>26.62</b>	<b>10.54</b>	<b>10.42</b>	<b>20.08</b>	<b>19.86</b>