NATIONAL BOARD OF ACCREDITATION

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

Note: To save Data Capturing Points as PDF Please click on print button and select destination as 'Save as PDF'. PLEASE SELECT LANDSCAPE MODE.

Program Name : Electronics & Communication Engineering	**Discipline**: Engineering & Technology
Level : Under Graduate	**Tier**: 1
Application No: 11526	**Date of Submission**: 20-02-2026

PART A- Profile of the Institute

A1.Name of the Institute: R.M.D.ENGINEERING COLLEGE	
Year of Establishment : 2001	Location of the Institute: KAVARAIPETTAI
A2. Institute Address:R.S.M.NAGAR,KAVARAIPETTAI,GUMMIDIPOONDI TALUK,THIRUVALLUR DISTRICT,TAMIL NADU	
City:Tiruvallur	State:Tamil Nadu
Pin Code:601206	Website:WWW.RMD.AC.IN
Email:RMDECP@GMAIL.COM	Phone No(with STD Code):044-67919191
A3. Name and Address of the Affiliating University (if any):	
Name of the University : Anna University, Chennai	City: Chennai
State : Tamil Nadu	Pin Code: 600025
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: **5**
- No. of PG programs: **0**

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 Machine Learning	2021	--	Artificial Intelligence and Machine Learning
2	Engineering & Technology	UG	Computer Science and Business System	2020	--	Computer Science and Business System
3	Engineering & Technology	UG	Computer Science and Engineering	2001	--	Computer Science and Engineering
4	Engineering & Technology	UG	Electronics & Communication Engineering	2001	--	Electronics and Communication Engineering
5	Engineering & Technology	UG	Information Technology	2001	--	Information Technology

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
Information Technology	Yes	Information Technology	UG
Computer Science and Business System	Yes	Computer Science and Business System	UG
Electronics and Communication Engineering	No	Electronics & Communication Engineering	UG
Computer Science and Engineering	Yes	Computer Science and 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/CON ARROVAL
1	Electronics & Communication Engineering	UG	2001 / --	60	Yes	2014	180	2014	F.No.South 201694917 1 Dated 10.

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. K. HELEN PRABHA
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)	180	180	180	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	188	188	184	183	175	180	178
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	2	6	5	5	3	4
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.	188	190	190	188	180	183	182

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)	180	188	0	104.44
2024-25 (CAYm1)	180	188	0	104.44
2023-24 (CAYm2)	180	184	0	102.22

Average [(ER1 + ER2 + ER3) / 3] = 103.70≡ 100

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).	185.00	183.00	184.00
B=No. of students who graduated from the program in the stipulated course duration	165.00	175.00	173.00
Success Rate (SR)= (B/A) * 100	89.19	95.63	94.02

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 92.95

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

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

Academic Performance	CAYm1(2024-25)	CAYm2(2023-24)	CAYm3 (2022-23)
Mean of CGPA or mean percentage of all successful students(X)	7.92	7.80	7.84
Y=Total no. of successful students	188.00	184.00	183.00
Z=Total no. of students appeared in the examination	188.00	184.00	183.00
API [X*(Y/Z)]	7.92	7.80	7.84

Average API[(AP1+AP2+AP3)/3] : 7.85

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)	7.79	8.01	7.98
Y=Total no. of successful students	190.00	187.00	180.00
Z=Total no. of students appeared in the examination	190.00	188.00	180.00
API [X * (Y/Z)]	7.79	7.97	7.98

Average API [(AP1 + AP2 + AP3)/3] : 7.91

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)	7.83	7.88	8.68
Y=Total no. of successful students	186.00	180.00	181.00
Z=Total no. of students appeared in the examination	187.00	180.00	182.00
API [X*(Y/Z)]:	7.79	7.88	8.63

Average API [(AP1 + AP2 + AP3)/3] : 8.10

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	185.00	183.00	184.00
X=No. of students placed	125.00	132.00	154.00
Y=No. of students admitted to higher studies	7.00	17.00	12.00
Z= No. of students taking up entrepreneurship	1.00	1.00	1.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	71.89	81.97	90.76

Average Placement Index = (P_1 + P_2 + P_3)/3: 81.54 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 Associati (Regular/ Contract/ Ad hoc)
1	Dr. K. HELEN PRABHA	XXXXXXX96H	Ph.D	Anna University, Chennai	Biomedical Signal Processing	02/01/2009	17.1	Professor	Professor	02/01/2009	Regular

2	Dr. K. K. THYAGARAJAN	XXXXXXX28G	Ph.D	Anna University, Chennai	Multimedia	03/09/2012	13.4	Professor	Professor	03/09/2012	Regular
3	Dr. D. RUKMANI DEVI	XXXXXXX10E	Ph.D	Anna University, Chennai	VLSI	05/06/2014	11.7	Professor	Professor	05/06/2014	Regular
4	Dr. A. CHILAMBU CHELVAN	XXXXXXX80P	Ph.D	Anna University, Chennai	Embedded System	17/06/2011	14.7	Professor	Professor	17/06/2011	Regular
5	Dr. C. BENNILA THANGAMMAL	XXXXXXX06R	Ph.D	Anna University, Chennai	Wireless Sensor Networks	01/12/2005	20.2	Lecturer	Professor	01/12/2021	Regular
6	Dr. A. SUMAIYA BEGUM	XXXXXXX54G	Ph.D	Anna University, Chennai	Image Processing	28/06/2007	18.7	Lecturer	Professor	01/11/2023	Regular
7	Dr. C. SHOBANA NAGESWARI	XXXXXXX35Q	Ph.D	Anna University, Chennai	Medical Image Processing	28/06/2007	18.7	Lecturer	Associate Professor	02/06/2014	Regular
8	Dr. J. JAYAUDHAYA	XXXXXXX67E	Ph.D	Anna University, Chennai	Applied Electronics	01/12/2006	19.2	Lecturer	Associate Professor	01/10/2011	Regular
9	Dr. P. POONKUZHALI	XXXXXXX75F	Ph.D	Anna University, Chennai	Image Processing	01/06/2006	19.8	Lecturer	Associate Professor	02/09/2013	Regular
10	Mr. S. BALASUBRAMANI	XXXXXXX34Q	M.E.	Anna University, Chennai	Embedded System Technologies	28/06/2007	18.7	Lecturer	Associate Professor	02/11/2015	Regular
11	Dr. N VINI ANTONY GRACE	XXXXXXX32P	Ph.D	Anna University, Chennai	Signal Processing	01/06/2011	14.8	Assistant Professor	Associate Professor	02/11/2015	Regular
12	Dr. J. SUMITHRA	XXXXXXX79L	Ph.D	Anna University, Chennai	Applied Electronics	15/06/2006	19.7	Lecturer	Associate Professor	02/07/2012	Regular
13	Dr. S. G. HYMLIN ROSE	XXXXXXX02R	Ph.D	Anna University, Chennai	Wireless Sensor Networks	02/08/2021	4.5	Assistant Professor	Associate Professor	01/04/2023	Regular
14	Dr. R. AARTHI	XXXXXXX01E	Ph.D	Anna University, Chennai	Applied Electronics	07/06/2011	13.5	Assistant Professor	Assistant Professor		Regular
15	Dr. M. SHAKUNTHALA	XXXXXXX35Q	Ph.D	Anna University, Chennai	Embedded System	27/05/2013	12.8	Assistant Professor	Assistant Professor		Regular
16	Mr. M. JYOTHI PRASAD	XXXXXXX55K	M.Tech	JNTU Hyderabad	Digital Electronics And Communication Systems	01/06/2013	12.8	Assistant Professor	Assistant Professor		Regular
17	Dr. P. ARUL	XXXXXXX76R	Ph.D	Anna University, Chennai	VLSI Design	05/06/2013	11.6	Assistant Professor	Assistant Professor		Regular
18	Ms. R. HEMALATHA	XXXXXXX20M	M.E.	Anna University, Chennai	Communication Systems	07/06/2013	12.7	Assistant Professor	Assistant Professor		Regular
19	Mr. V. KUMARAVEL	XXXXXXX28Q	M.E.	Anna University, Chennai	Communication Systems	26/04/2014	10.2	Assistant Professor	Assistant Professor		Regular
20	Mr. B. JAIGANESH	XXXXXXX54L	M.E.	Anna University, Chennai	Communication Systems	21/05/2014	11.8	Assistant Professor	Assistant Professor		Regular
21	Mr. BHARATHI DHASAN D.	XXXXXXX75J	M.E.	Anna University, Coimbatore	Embedded and Real time Systems	30/05/2014	11.8	Assistant Professor	Assistant Professor		Regular
22	Dr. P. SANTHOSHINI	XXXXXXX89E	Ph.D	Anna University, Chennai	Optical Communication	02/06/2014	11.8	Assistant Professor	Assistant Professor		Regular

23	Mr. PRABHU. V. S	XXXXXXX67P	M.E.	Anna University, Chennai	Communication Systems	04/06/2014	11.7	Assistant Professor	Assistant Professor		Regular
24	Mr. KARUPPAIAH.S	XXXXXXX55H	M.E.	Anna University, Tiruchirappalli	Optical Communication Engineering	11/06/2014	11.7	Assistant Professor	Assistant Professor		Regular
25	Mr. J. JAGAN BABU	XXXXXXX28C	M.E.	Anna University, Chennai	Communication Systems	04/06/2015	10.7	Assistant Professor	Assistant Professor		Regular
26	Ms. S. GAYATHRI PRIYA	XXXXXXX05P	M.E.	Anna University, Chennai	Applied Electronics	04/01/2019	7	Assistant Professor	Assistant Professor		Regular
27	Ms. S. JAYANTHI	XXXXXXX93L	M.E.	Anna University, Chennai	Embedded System Technologies	20/02/2020	5.11	Assistant Professor	Assistant Professor		Regular
28	Ms. G. ANITHA	XXXXXXX89E	M.E.	Anna University, Chennai	Embedded System Technologies	02/12/2020	5.1	Assistant Professor	Assistant Professor		Regular
29	Dr. M AYEESHA NASREEN	XXXXXXX68A	Ph.D	Anna University, Chennai	Wireless Sensor Networks	02/08/2021	3.4	Assistant Professor	Assistant Professor		Regular
30	Ms. S INDUMATHI	XXXXXXX55N	M.E.	Anna University, Chennai	Applied Electronics	18/08/2021	2.10	Assistant Professor	Assistant Professor		Regular
31	Ms. R. M. SENTHIL PRIYA	XXXXXXX77M	M.Tech	SRM University	Embedded System Technology	20/12/2021	4.1	Assistant Professor	Assistant Professor		Regular
32	Ms. K. NISHANTHI	XXXXXXX58N	M.E.	Anna University, Chennai	Applied Electronics	11/11/2024	1.2	Assistant Professor	Assistant Professor		Regular
33	Ms. L. DEVI PRIYA	XXXXXXX16A	M.E.	Anna University, Chennai	Communication Systems	15/11/2024	1.2	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)).

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

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

Description	**CAY(2025-26)**	**CAYm1 (2024-25)**	**CAYm2 (2023-24)**
UG1.B	182	186	185
UG1.C	186	185	185
UG1.D	185	185	183
UG1: Electronics & Communication Engineering	**553**	**556**	**553**
DS=Total no. of students in all UG and PG programs in the Department	553	556	553
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=** 553	**S2=** 556	**S3=** 553
DF=Total no. of faculty members in the Department	28	26	31

Description	CAY(2025-26)	CAYm1 (2024-25)	CAYm2 (2023-24)
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=** 28	**F2=** 26	**F3=** 31
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= 19.75**	**SFR2= 21.38**	**SFR3= 17.84**
Average SFR for 3 years	**SFR= 19.66**		

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)	14	14	27.00	18.15
2024-25(CAYm1)	12	14	27.00	16.30
2023-24(CAYm2)	11	20	27.00	17.59

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	3.00	6.00	6.00	6.00	18.00	16.00
2024-25	3.00	6.00	6.00	5.00	18.00	15.00
2023-24	3.00	5.00	6.00	6.00	18.00	20.00
Average	RF1=3.00	AF1=5.67	RF2=6.00	AF2=5.67	RF2=18.00	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	Mr.Pawan Kumar Singh	Senior Consultant	KPMG Assurance and Consulting Services Limited, Chennai	Computer Networks	51.00
2	Mr.Bharani Dharan R C	Senior QA Software Engineer	Extreme Networks	Analog and Digital Communication	52.00
3	Mr.Balaji J	Associate Consultant UI/UX	SecureKloud Technologies	Wireless Sensor Networks	52.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr.Pawan Kumar Singh	Senior Consultant	KPMG Assurance and Consultancy	Computer Networks	52.00
2	Mr. Bharani Dharan R C	Senior QA Software Engineer	Extreme Networks	Analog and Digital Communication	51.00
3	Mr. Balaji J	Associate Consultant UI/UX	SecureKloud Technologies	Wireless Communication	53.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr.Pawan Kumar Singh	Senior Consultant	PMG Assurance and Consultancy	Computer Networks	52.00
2	Mr. Bharani Dharan R C	Senior QA Software Engineer	Extreme Networks	Digital Communication	51.00
3	Mr. Balaji J	Associate Consultant UI/UX	SecureKloud Technologies	Adhoc and Wireless Sensor Networks	52.00

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	31	31	30
2	No. of peer reviewed conference papers published	58	50	30
3	No. of books/book chapters published	11	11	8

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. P. Santhoshini	-	ECE	Tactile Connect: AI-Enhanced Messenger App for people with dual sensory loss (Visual-Hearing Impaired)	PM Vishwakarma in the MSME	12 Months	11.50
Dr. K. Helenprabha	-	ECE	Hybrid Medi Card System	Tamilnadu Skill Development Corporation Limited (TNSDC)	6 Months	0.10
Dr. C. Bennila Thangammal	-	ECE	AgriBot – An IoT & AI Powered Precision Farming System	Tamilnadu Skill Development Corporation Limited (TNSDC)	6 Months	0.10
Dr. C. Bennila Thangammal	-	ECE	AI Powered Number Plate Detection for Traffic Rule Reinforcement	Tamilnadu Skill Development Corporation Limited (TNSDC)	6 Months	0.10
Dr. J. Jayaudhaya	-	ECE	Lacto Check	Tamilnadu Skill Development Corporation Limited (TNSDC)	6 Months	0.10
Dr. C. Shobana Nageswari	-	ECE	AI Driven Traffic Management and Driver Safety System	Tamilnadu Skill Development Corporation Limited (TNSDC)	6 Months	0.10
Mr. S. Balasubramani	-	ECE	Enhancing Mobility for Paralyzed Patients Through Eyeball Movement Detection	Tamilnadu Skill Development Corporation Limited (TNSDC)	6 Months	0.10
Dr. P. Santhoshini	-	ECE	Smart Vehicle	Tamilnadu Skill Development Corporation Limited (TNSDC)	6 Months	0.10
Ms. L. Devipriya	-	ECE	Real time Safety and Compliance Monitoring in Construction Sites using AI	Tamilnadu Skill Development Corporation Limited (TNSDC)	6 Months	0.10
						Amount received (Rs.):12.30

(CAYm2)

(CAYm3)

Total Amount (Lacs) Received for the Past 3 Years: 12.30

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. D. Rukmani Devi	-	ECE	Six Way Floating Table for X-RAY	Galaxy Medical Equipments, Malumichampatti, Tamil Nadu.	4 Months	0.80
Dr. A. Chilambuchelvan	-	ECE	AI powered battery management system for sustainable EV	GKS Automation, Irumbuliyur, Chennai.	5 Months	0.52
Dr. C. Bennila Thangammal	-	ECE	DP-Enabled Automation Roadmap for Two Wheeler Multi-Rib Belt Production (EPDM) in the Automotive Sector	BGS International Virugambakkam, Chennai.	4 Months	0.80
Dr. A. Sumaiya Begum	-	ECE	Health Monitoring and Wage Calculation for Laborers	ADL Hydraulics and Rubber Engineering	5 Months	0.51
Dr. C. Shobana Nageswari	-	ECE	IoT based Driver monitoring and crash alert system	RHIA Control Systems, Ekkatuthangal, Chennai.	3 Months	0.51
Dr. J. Jayaudhaya	-	ECE	Analysis of PV Architecture	Global Innovatives, Anna Nagar west, Chennai.	3 Months	0.51
Dr. P. Poonkuzhali	-	ECE	Smart Surveillance System	ADL Hydraulics and Rubber Engineering	5 Months	0.51
Mr. S. Balasubramani	-	ECE	Design Of Solar Dehydrator in Vegetables Preservation	Swamy Engineering Company, Salem.	3 Months	0.52
Dr. N. Vini Antony Grace	-	ECE	AI Powered Driver Safety Monitoring System: Real Time Detection & Alerting for Enhanced Road Safety	Pro Acts, Thirumullaivoyal, Chennai.	3 Months	0.51
Dr. J. Sumithra	-	ECE	Collective Data Sanitization for Preventing sensitive Information Inference attacks in Social networks	Global Innovatives, Anna Nagar west, Chennai.	3 Months	0.51
Dr. Hymlin Rose S G	-	ECE	Nano-Robots for Targeted Drug Delivery	KV'S Biomedical & Consultancy, Irumbuliyur, Chennai.	3 Months	0.51
Dr. M. Shakunthala	-	ECE	Optimization and Semi-Automation of Paint Manufacturing Process for Improved Efficiency	Yash Conchem Pvt.Ltd, Chennai	3 Months	1.03
Ms. R. Hemalatha	-	ECE	Self Hosted Cloud Storage	SG Enterprises, Thiruvallur	3 Months	0.51
Mr. B. Jaiganesh	-	ECE	AI Enabled Emergency Responder Unit	D G Traders Annanagar Chennai	4 Months	0.52
Mr. J. Jagan Babu	-	ECE	AI Based Accidental Monitoring of Vehicles	SSSP Traders, Chintadripet, Chennai.	6 Months	0.55
Ms. S. Gayathri Priya	-	ECE	Smart Van: Ensuring safety for school children	Prabhu Travels, Erulapalayam, Chennai.	3 Months	0.53
Ms. G. Anitha	-	ECE	Enhancing Fuel Station Operations	S-Net Solutions, Pondy	3 Months	0.52
						Amount received (Rs.):9.87

(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. D. Rukmani Devi	-	ECE	Detector Safety Stand Motorized with Sixway Floating Table	Galaxy Medical Equipments 2/311, Sri Krishna Nagar, Opp Karpagam University, Malumichampatti, Tamil Nadu	3 Monhs	0.60
Dr. C. Bennila Thangammal	-	ECE	Automization of four wheeler Multi Rib Belts (EPDM) using DP Technology	BGS International, No.55, Saibaba Colony, First Street, Virugambakkam, Chennai - 600 092. India	6 Months	0.52
Dr. A. Sumaiya Begum	-	ECE	Protecting Indoor Air Quality Using Toxic Gas Detection System	ADL Hydraulics and Rubber Engineering Ambattur Industrial Estate, Sidco Industrial Estate, Ambattur, Chennai, Tamil Nadu 600098	6 Montths	0.51
Dr. C. Shobana Nageswari	-	ECE	Power Optimization of Two Stage Operational Amplifier Using Power Gating Technique	RHIA Control Systems,77B, Tiny Sector, Industrial Estate, Ekkatuthangal, Chennai, Tamil Nadu 600032.	4 Months	0.51
Dr. J. Jayaudhaya	-	ECE	Smart Voting System Using Block-Chain	Lakshmi Groups, No.31,4th Main Road, Rajalakshmi Nagar, Velachery, Chennai-600042	5 Months	0.51
Ms. P. Poonkuzhali	-	ECE	Smart Portable Device for Trekking People in Forest	ADL Hydraulics and Rubber Engineering Ambattur Industrial Estate, Sidco Industrial Estate, Ambattur, Chennai, Tamil Nadu 600098	6 Months	0.51
Dr. N. Vini Antony Grace	-	ECE	Intelligent Gait Trainer as a Crutch Tool	Pro Acts T-143 SIDCO, Womens's Industrial Estate, Kattur, Thirumullaivoyal, Chennai - 600062	3 Months	0.51
Dr. J. Sumithra	-	ECE	Automatic Active Phase Selector for Single Phase Load From Three Phase Supply	Lakshmi Groups, No.31,4th Main Road, Rajalakshmi Nagar, Velachery, Chennai-600042	5 Months	0.51
Dr. Hymlin Rose S G	-	ECE	Object Sorting Conveyor Belt	Ganapathy Engineering Work No:22, C.T.H.Road, Tiruninravur, Tiruvallur, Tamil Nadu 602024	3 Months	0.51
Dr. R. Aarthi	-	ECE	Automatic Emotion Recognition System Using ECG and GSR	M/S Aptech Solutions Gloden Colony Road Mogappair, Chennai-600050	6 Months	0.51
Dr. M. Shakunthala	-	ECE	IoT based safety and security platform for Chemical plants	Yash Conchem Pvt Ltd, Chennai	3 Months	0.51
Dr. P. Arul	-	ECE	FPGA Implementation of Forelimb Gesture Recognition Using Deep Learning	M/S Yentech Engineering SIDCO Industrial Estate Ambattur, Chennai-600089	6 Months	0.51
Ms. R. Hemalatha	-	ECE	Fire Alarm System	SG Enterprises, 21-1, Rajaji Salai, Thiruvallur - 602001	3 Months	0.51
Mr. B. Jaiganesh	-	ECE	Safety Alert System Using IoT for Iron Scrap Depot	D G Traders, 13th Main road Annanagar Chennai	4 Months	0.52
Mr. J. Jagan Babu	-	ECE	AI based Boom Barrier	SSSP Traders, No.37/18 Vedhagiri Street, Chintadripet, Chennai-600002	6 Months	0.53
Ms. S. Gayathri Priya	-	ECE	Car Door Accident Management System	Prabhu Travels,5/255, Kangaiamman Kovil Street, Erulapalayam, Chennai 602107	3 Months	0.52
Ms. S. Jayanthi	-	ECE	Prediction of Attacks in Wireless Sensors Network Using AI	SG Enterprises, 21-1, Rajaji Salai, Thiruvallur - 602001	3 Months	0.51
Ms. G. Anitha	-	ECE	Surveillance Robot with Access Control	S-net Solutions, Pondicherry -9	6 Months	0.51
Ms. R. M. Senthil Priya	-	ECE	Design of Rectangular Microstrip Patch 4*4 Array for Satellite Communication	Mirror Technologies Pvt. Ltd., Chennai	5 Months	0.51
						Amount received (Rs.):9.83

(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. K. Helenprabha	-	ECE	PCB Design for their Projects	Green Circuits, Chennai	3 Months	0.26
Dr. D. Rukmani Devi	-	ECE	Surveillance System	Peak Sports Academy	3 Months	0.50
Dr. A. Chilambuchelvan	-	ECE	Smart Home Automation Using Artificial Intelligence	Apex Service and Instruments, No 17/1 Ettiamman Nagar Main Road, Thirumullaivoyal Chennai 600 062.	5 Months	0.26
Dr. C. Bennila Thangammal	-	ECE	Manufacturing of Wrapped V Belts in Morden Technology	TPM International Trading Company, Madurai.	6 Months	0.51
Dr. A. Sumaiya Begum	-	ECE	IOT based Air Pollution Monitoring System	Aptech Solutions, Chennai	6 Months	0.26
Dr. C. Shobana Nageswari	-	ECE	A Secure and Scalable technology for Prevention of entry of Unauthorised Person	RHIA Control Systems, Chennai	3 Months	0.26
Dr. J. Jayaudhaya	-	ECE	Performance Analysis of PV Architectures Under Partial Shaded Condition	RBA Education, Chennai	3 Months	0.25
Ms. P. Poonkuzhali	-	ECE	Prediction of Mental Health using Deep Neural Networks	AVSR Constructions, Chennai	6 Months	0.26
Mr. S. Balasubramani	-	ECE	Development of De-husking Machine Using Human Machine Interface	Arhunkia Engineering Solutions LLP, Coimbatore	3 Months	0.26
Dr. N. Vini Antony Grace	-	ECE	Design of MIMO antennas for X Band	ProActs, Chennai	3 Months	0.25
Dr. J. Sumithra	-	ECE	Automatic Speed Control of Automotives on Detection of Obstacle in Proximity and Also Non Fastening of Seat Belt.	Zabel Services India Pvt Ltd, Sullurpet, AP	3 Months	0.26
Dr. Hymlin Rose S G	Mrs. M. Ayeesha Nasreen	ECE	Vehicular Mobility Management for IP-Based Vehicular Networks	Jamuna Transport Contractors, Chennai	3 Months	0.26
Ms. R. Aarthi	-	ECE	Waste Collection and Monitoring using IoT	AVSR Constructions, Chennai	6 Months	0.26
Ms. M. Shakunthala	-	ECE	Automatic Temperature Controlled Fan	Respro Labs, Chennai	3 Months	0.26
Mr. P. Arul	-	ECE	Industrial Automation using IoT	Aptech Solutions No1324, Golden colony, Mogappair, Chennai 50	6 Months	0.25
Ms. R. Hemalatha	-	ECE	Hub Design for Networking	SG Enterprises, Thiruvallur	3 Months	0.26
Mr. J. Jagan Babu	-	ECE	IOT based Automated Pill Dispenser	Bright World Innovations, Porur, Chennai	5 Months	0.26
Ms. S. Gayathri Priya	-	ECE	IoT Based Indoor Air Quality Monitoring System	Respro Labs, Chennai	3 Months	0.26
Ms. S. Jayanthi	-	ECE	Automatic ON OFF Generator Over UPS	SG Enterprises, Thiruvallur	3 Months	0.26
Ms. G. Anitha	-	ECE	Smart Face Recognition System	S- Net Solutions, Pondy	3 Months	0.26
Ms. R. M. Senthil Priya	-	ECE	Metamaterial in Reconfigurable Antenna for Biomedical Applications	Mirror Technologies, Chennai	3 Months	0.30
Mr. D. Bharathidasan	-	ECE	Smart AI Traffic Light Control	Ebenezer Engineering Works, Chennai	3 Months	0.26
Mr. V. Kumaravel	-	ECE	Smart Plastic Waste Management Device	Bright World Innovations, Porur, Chennai	3 Months	0.26
Mr. V. S. Prabhu	-	ECE	Smart Lighting System for Less Energy and Cost Efficiency	Ebenezer Engineering Works Pvt Ltd, Ambattur Industrial Estate	3 Months	0.26
Ms. S. Indhumathi	-	ECE	Design of MIMO Antennas for Wideband Applications	ProActs, Chennai	3 Months	0.26
Mrs. P. Santhoshini	-	ECE	Manufacturing of industrial automated rapid v -Belts	TPM International Trading Company, Madurai	3 Months	0.26

						Amount received (Rs.):7.26

Total amount (Lacs) received for the past 3 years: 26.96

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. K. K. Thyagharajan	A Method and System of Detecting a Fall Action of the Subject / For Pre – Grant patent hearing	1 Month	1.00	0.79	Patent Granted
Dr. A. Chilambuchelvan & Ms. G. Karthika	AR Assistance for Instrument Operation and Calibration / For Pre – Grant patent hearing	1 Month	1.00	0.79	Patent Granted
Dr. A. Sumaiya Begum	Executive Post Graduate Certification in Artificial Intelligence and Machine Learning - IIT Roorkee	11 Months	1.53	1.00	2 Guest Lectures, 1 Working Model, 1 proposal shortlisted for final interview under AICTE (RPS)
Dr. C. Shobana Nageswari	PG Certificate Program on Internet of Things and Embedded Systems - IIT Jammu	6 Months	0.80	0.71	2 Conference Papers, 3 Working Models, Delivered advanced courses on IoT and Embedded Systems
Dr. M. Shakunthala	Advanced Certification in Applied Data Science, Machine Learning & IoT - IIT Guwahati	9 Months	1.17	0.78	Published 2 conference papers
			Amount received (Rs.): 5.50		

(CAYm2)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Dr. D. Rukmani Devi	Machine Learning Based Finger Sleeve to Detect Heartbeat of Old Age Patients / For renewal of patent	3 Months	0.27	0.23	Patent Granted
Dr. A. Chilambuchelvan	Automated Agriculture Rover / For Pre-Grant Examination and hearing	1 Year	1.00	0.74	Patent Granted
Dr.K.HelenPrabha	Covid Protection Device / For patent renewal	3 Months	0.17	0.13	Patent Granted
Dr. K.K.Thyagharajan	Leaf Species Recognition System Based on Intersecting Cortical Model of Pulse Coupled NN/ FER renew	4 Months	1.00	0.74	Patent Granted
Ms. Hemalatha R Dr. Ilamathi K Dr. Bennila Thangammal C Ms. Nathiya Devi K	Smart Shopping Cart with Automated Billing System / For Pre –Grant patent hearing	1 Month	1.00	0.79	Patent Granted
Ms. R. M. Senthil Priya	PG Level Advanced Certification Program in VLSI Chip Design organised by IISC, Bangalore	11 Months	3.90	3.90	Conducted 2 Workshops for hands on training on Vivado tool. 4 Working models Facilitated introduction of new elective courses in VLSI domain.
			Amount received (Rs.): 7.34		

(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. A. Chilambuchelvan	Digital Twin of a Centrifugal Pump / For First examination report of patent	6 Months	0.50	0.50	Patent Granted
Dr. D. Rukmani Devi	The Flink Modular Helmet for Road Safety Using Wireless Transmission / For renewal of patent	3 Months	0.23	0.23	Patent Granted
Dr.K.HelenPrabha	Research Centre Fee	3 Years	0.30	0.30	Scholars Enrolled-9 Graduated-18 Supervisors-3
			Amount received (Rs.): 1.03		

Total amount (Lacs) received for the past 3 years : 13.87

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	Electrical & Electronics Laboratory	3	Cathode Ray Oscilloscope, Function Generator, Transformer,	22 Hrs (Odd) 1	Mr.H. Edwin S	Lab Assistan	ITI Electronic
2	Electronic Devices and Circuits Laboratory	3	Cathode Ray Oscilloscope, Function Generator, Dual Regulated	8 Hrs (Odd) 8 H	Mr. R. Nagara	Lab Assistant	DECE
3	Linear Integrated Laboratory	3	Cathode Ray Oscilloscope, Function Generator, Dual Regulated	8 Hrs (Even)	Mr. R. Nagara	Lab Assistant	DECE
4	Communication Laboratory	3	Sampling Kit, Time Division Multiplexing Kit, AM & FM Kit, PCM	12 Hrs (Odd) 8	Mr. R. Karthic	Lab Assistant	DECE
5	Advanced Communication Laboratory	3	Cathode Ray Oscilloscope, Function Generator, Digital Storage	12 Hrs (Odd)	Mr. R. Karthic	Lab Assistant	DECE
6	Microprocessor Laboratory	3	8086 and 8051 Trainer Kit, Interfacing Card , Stepper motor,	12 Hrs(Odd)	Ms. Divya Bh	Lab Assistant	DECE
7	Embedded Laboratory	3	Embedded Trainer Kit with ARM board, ARM Processor, PIC	12 Hrs (Even)	Ms. Divya Bh	Lab Assistant	DECE
8	Digital Laboratory	3	Cathode Ray Oscilloscope, Function Generator, Dual Regulated	8 Hrs (Even)	Ms.S.Bhavar	Lab Assistant	DECE
9	DSP Laboratory	1	DSP Processors Kit, PC with MATLAB Software & Xilinx	12 Hrs (Odd)	Mr. S.Kathirv	Lab Assistant	DECE
10	VLSI Laboratory	1	PC with Xilinx Software, Cathode Ray Oscilloscope, Function	12 Hrs (Odd)	Mr. S.Kathirv	Lab Assistant	DECE
11	Robotics Laboratory	3	Ugot – AI SPACE KIT – 5 Models, Ugot – AI City Guardian Kit – 4	4 Hrs (Even)	Ms.Reddyvar	Lab Assistant	DECE

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures

1	BASIC SAFETY MEASURES:	●The laboratory is first aid kit. ●Fire Extinguishers are present in the laboratory. ●There are sufficient earth connections on hand. ●All electrical installations employ MCBs. ●The HT switchboards are carpeted with thick rubber. ●The laboratory is outfitted with safety guidelines. ●All electrical apparatus and systems are tested at the beginning of the semester. ●You must pull back your long hair. ●No loose clothing is permitted. ●Never use a knife or your teeth to remove insulation from a wire. Always employ the proper wire remover. ●After use, unplug all electrical equipment. ● We have a doctor for an emergency 24/7 for medical assistance for the students when they are required. ●We have also stationed one ambulance on the campus to cater to the medical needs.
2	ENGINEERING PRACTICE LABORATORY	●Wear a lab coat or close-fitting overalls with no external pockets. ● Wear fully covered, non-slip shoes ●Tie back long hair and remove loose clothing, neckties, and jewelry (rings, bracelets, necklaces) Proper ventilation and lighting ● Keep aisles and work areas clear of clutter and return tools to their proper storage immediately after use.
3	ELECTRONIC DEVICES AND CIRCUITS LABORATORY	●Always turn off the power supply and unplug the breadboard or circuit before making any wiring changes or replacing components to avoid accidental shorts or shocks. ● When probing a live circuit, keep one hand in your pocket or behind your back to prevent a path for electric current to flow through your chest/heart. ●Ensure all test instruments (oscilloscopes, function generators) are properly grounded and never override the three-prong safety plugs. ●Never work with wet hands or near liquids, and remove metal watches, rings, or bracelets that could create a low-resistance path for a short circuit. ●Keep aisles and work areas clear of clutter and return tools to their proper storage immediately after use.
4	LINEAR INTEGRATED LABORATORY	●Always turn off the power supply and unplug the breadboard or circuit before making any wiring changes or replacing components to avoid accidental shorts or shocks. ● When probing a live circuit, keep one hand in your pocket or behind your back to prevent a path for electric current to flow through your chest/heart. ●Ensure all test instruments (oscilloscopes, function generators) are properly grounded and never override the three-prong safety plugs. ●Never work with wet hands or near liquids, and remove metal watches, rings, or bracelets that could create a low-resistance path for a short circuit. ●Keep aisles and work areas clear of clutter and return tools to their proper storage immediately after use.
5	COMMUNICATION LABORATORY	●Never look directly into the open end of a waveguide or point a high-gain antenna toward yourself or others while the transmitter is active ● Always ensure the load is properly connected before turning on a transmitter ● When audio modulation, start with the volume at the minimum level to prevent sudden high-frequency bursts ●Avoid sharp bends or kinks in Coaxial or Fiber Optic cables; damaged shielding in coax leads to RF leakage, and broken cores in fiber optics can cause dangerous .laser light "leaks." ●Never look directly into the end of a Fiber Optic cable or connector
6	ADVANCED COMMUNICATION LABORATORY	●Never look directly into an open-ended Waveguide or Horn Antenna while the source (like a Klystron or Gunn Diode) is active ●Never look into the end of an Optical Fiber cable or connector ●Always ensure a Matched Load or Antenna is connected to the transmitter before powering up ●Ensure all Coaxial connectors (SMA/N-type) are tightened properly to prevent RF leakage, ●Never exceed the Maximum Input Power (usually +20 or +30 dBm) of a Spectrum Analyzer or Network Analyzer; always use external attenuators if the source signal strength is unknown.
7	MICROPROCESSOR LABORATORY	●Always wear an Anti-Static (ESD) wrist strap when handling microprocessors (like 8085/8086) or microcontrollers, as a tiny static spark from your body can permanently destroy the internal logic gates. ●Always connect your circuit components and check your wiring before turning on the DC power supply ●Ensure the Vcc (+5V) and Ground pins of the processor or ICs are correctly identified ● Keep the workbench clear of loose wires, metal scraps, on the underside of Trainer Kit. ● Always use a regulated power supply with a current-limit setting to prevent a small wiring error
8	EMBEDDED SYSTEMS LABORATORY	●Always verify if your board operates on 3.3V or 5V logic before connecting sensors or actuators ● Use an external power source for high-current peripherals like motors or relays ● Always connect the Ground (GND) wire first when interfacing external hardware to ensure a common reference and prevent "floating" voltages from damaging inputs. ●Ensure all pins and jumpers are in the correct position before flashing firmware; interrupting power or disconnecting cables during a write cycle can corrupt the chip's memory. ● Monitor the temperature of SOCs (System on Chips) and Voltage Regulators during intensive processing

9	DIGITAL ELECTRONICS LABORATORY	●Always use a regulated 5V DC supply for TTL logic gates; exceeding 5.25V can instantly destroy the internal transistors of 74-series ICs. ●Turn off the power supply before inserting or removing ICs and jumper wires to avoid accidental short circuits between adjacent pins. ●Double-check the Vcc (Pin 14/16) and GND (Pin 7/8) connections for every IC before powering on ●Always use a current-limiting resistor (typically 220Ω to 330Ω) in series with LEDs ● Use an IC insertion/extraction tool to avoid bending pins or puncturing your fingers, and ensure all pins are properly seated in the breadboard before applying power.
10	DSP & VLSI LABORATORY	●Always use grounded wrist straps and anti-static mats; VLSI chips have nanometre-scale transistors that a tiny static spark ●Ensure your FPGA or DSP board's I/O bank voltages (1.8V, 2.5V, or 3.3V) match your external sensors; over-voltage on these high-speed pins will "brick" the entire processor. ●Never operate high-performance DSP processors or FPGAs without their factory-installed heatsinks ●Ensure a stable power supply during Flash or PROM programming ●Always check that decoupling capacitors are in place when breadboarding VLSI components to prevent high-frequency noise and "ground bounce" from damaging the logic gates.
11	ROBOTICS LABORATORY	●Always keep the E-Stop button within immediate reach while running code ●Keep hands, hair, and loose clothing away from gears, belts, and joints ● Use only designated chargers for LiPo (Lithium Polymer) batteries and never leave them charging unattended; damaged or overcharged batteries in mobile robots are a significant fire hazard. ● Always test new code or algorithms at 25% speed (T1 mode) before running at full operational speed to ensure the logic and pathing are correct. ● Ensure all base plates, actuators, and end-effectors are bolted securely

D3. Project Laboratory/Research Laboratory

7.5 Project Laboratory/Research Laboratory /Centre of Excellence (20)

PROJECT LABORATORY :

The Department is supported by highly qualified faculty members, many holding PhD degrees with expertise in diverse specialized fields. Under their guidance, students carry out project work in a structured and effective manner. The projects aim to develop the ability to apply engineering concepts, tools, and techniques to solve real-world problems. Emphasis is placed on innovation, critical thinking, and independent learning while strengthening professional competence, teamwork, and communication skills to meet industry and research demands.

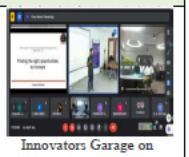
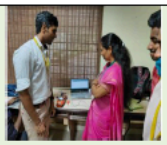
FACILITIES AVAILABLE:

The Department maintains strong industry interaction and actively undertakes consultancy projects, bridging the gap between academic learning and real-world applications. These collaborations help faculty and students stay updated with current technologies and industry trends. Students are trained to design and develop prototypes by validating concepts through simulation tools and are encouraged to build application software when required.

They also gain hands-on experience through internships, industrial visits, workshops, and expert lectures. The Department promotes interdisciplinary projects, innovation, and entrepreneurship, while real-time exposure through consultancy work enhances technical skills, project management abilities, and overall professional competence.

7.5.1 ADDITIONAL FACILITIES CREATED FOR IMPROVING THE QUALITY OF PROJECT

- **Additional Facilities Created for Improving the Quality of Projects** include upgraded laboratories with equipment such as FPGA kits, and ARM Processor board, Noise Generator, ADSP Evaluation Kit & PIC Universal Programmer.
- Modern simulation tools (like MATLAB & Cadence) are provided for design and analysis. Dedicated project labs with PCB design, soldering stations, and testing instruments support hardware implementation.
- High-speed internet, access to IEEE journals, and industry-supported labs further enhance learning. These facilities help students design, test, and implement innovative, real-time ECE projects effectively.

Sl. No	Facility Name	Details of Equipment	Reason(s) for Creating Facility	Utilization
1	Telecom Laboratory	Personal computers, Logic Analyzer, LAN trainer, CISCO 1841 router, Wireless LAN kit	To develop skills for design, fabrication and measurement of telecommunication systems	 Roadshow - Tata elxsi
2	Automotive Electronics Laboratory	Raspberry Pi kits and modules	To create skills in electronics applications in automobile industry	 Innovators Garage on Mobility Engineer 2030
3	Embedded Systems Laboratory	30 PCs with Embedded C & QNX Software	To enhance knowledge in Embedded C	 **Temperature Alert Via IoT**
4	Networks Laboratory (CCNA)	30 PCs with networking software	To improve networking, programming and aptitude skills	 CCNA Certification
5	Project/ Research Laboratory	PCs, Network Analyzer, DSO, Spectrum Analyzer, Cadence, MATLAB	To design and develop VLSI and communication systems	 Project Contest
6	Robotics Laboratory	COBOT, Robot arm, Controller, DOBOT kits	To enable robotics innovation and hands-on experience	 Hackathon Contest
7	Product Development Laboratory	3D Printer, CNC Router, Laser Cutter, Scanner	To support product design and prototyping	 **Arduino and MQ Sensor**

7.5.2 ADDITIONAL FACILITIES CREATED FOR IMPROVING THE QUALITY OF PROJECT USING AICTE IDEA LAB

- Additional facilities have been established to enhance the quality of student projects, including the AICTE IDEA Lab equipped with advanced tools such as a 3D printer, rapid prototyping machine, 3D scanner, CNC router/engraver, and laser cutter/engraver.
- These resources enable efficient design, fabrication, and testing, supporting the development of innovative and high-quality projects.

S.No	Facility Name	Details	Reason(s) for creating facility	Utilization
1.	3D Printer, Rapid Prototyping Machine.	Printing material: ABS or PLA plastic, layer thickness:0.2mm-0.4mm, print speed:10-100 cubic cm/hr, print size:140×140×135mm, print weight:9.5kgs, power	To enhance creativity, accelerates the design process, and facilitates the exploration of novel ideas.	Research and Project work
2	3D PRINTER (PRATHAM 3.0)	Print Technology : Fused Deposition Modelling,Build Volume:500 x500 x500 mm, Dimensional Tolerance: ± 0.1 mm Print Speed : 40-120 mm/s Layer resolution : 0.08 / 0.1 / 0.2 / 0.3 /0.4mm Extruder Temperature: 280° C Filament Diameter: 1.75 mm Nozzle Diameter : 0.4 mm Filament Compatibility: ABS / PLA / PETG / Composites	To generate ideas as a proto-type model and improve the knowledge in product design and development with working models	Project work, attend competitions. hackathon and Industrial applications
3	3D SCANNER	Accuracy : 0.07 mm Frame rate : 25-30 fps Point resolution : Upto 0.15 mm Depth of view : 180 - 300 mm Field of view : min 86 X 115 / max 144 X 192 Texture : Yes Texture Resolution : Up to 0.1 mm over 1 m Light source : Blue LED Data acquisition speed`: 1M points / sec Operating Temperature : +5 to +40° C Weight : 900 g	To generate ideas as a proto-type model and improve the knowledge in product design and development with working models	Project work, attend competitions. hackathon and Industrial applications
4	CNC ROUTER/ ENGRAVER	Working area : 2440 mm x 1220 mm Z- Gantry clearance : 250 mm Rapid transverse speed : 25 m/minute Max working Speed: 15 m/minute Spindle : 5.5 kW water cooled Metal spindle (Permanent torque), 24000 rpm	To generate ideas as a proto-type model and improve the knowledge in product design and development with working models	Project work, attend competitions. hackathon and Industrial applications
5	LASER CUTTER/ ENGRAVER	Working Area : 1200 mm X 900 mm Laser power : 130 Watts Cutting Speed : 0 - 3600 mm / min Software : RuiDa RD works V8, CorelDraw, AutoCAD and Photoshop Graphic format supported : BMP, CIF, JPEG, TGA, TIFF, PLT, AI, DXF, DST Power Supply : AC 220V / 50-60 Hz Stabilizer : 3kVA Auxiliary device - Exhaust fan and exhaust pipe Cooling mode – Water cooling and protection system/CW5200	To generate ideas as a proto-type model and improve the knowledge in product design and development with working models	Project work, attend competitions. hackathon and Industrial applications

- The Idea Lab provides a creative environment for students to transform innovative ideas into practical solutions.
- It is equipped with modern tools and technologies to support design, prototyping, and experimentation.
- Students gain hands-on experience by working on real-time projects, enhancing their technical and problem-solving skills. The lab encourages teamwork, entrepreneurship, and the development of industry-relevant innovations.

Fig 7.5.2.1 Inaugurated AICTE IDEA LAB by Dr T.G.Sitharam.

7.5.2.2-3D Printer

Fig 7.5.2.3 Laser Cutters

Fig 7.5.2.4 PCB Milling Machine

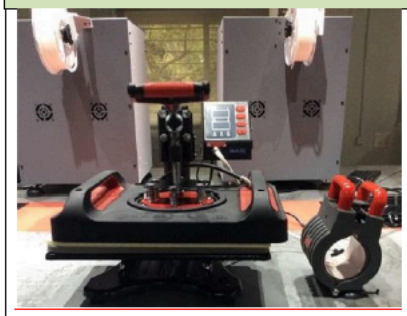


Fig 7.5.2.5 Heater Press Mahine

Fig 7.5.2.6 CNC Router

OUTCOME OF IDEA LABORATORY

- Students have successfully utilized the IDEA Lab facilities to develop innovative projects and have won prizes in various competitions.
- Showcasing their creativity, technical skills, and practical implementation abilities.

Fig 7.5.2.7 Students Participated in AICTE IDEA LAB TECH FEST-2025

7.5.3 OUTCOME OF PROJECT LABORATORIES:

- The project laboratories have significantly contributed to research and innovation, resulting in patent publications and granted patents by faculty.
- Students have also achieved recognition beyond the institution by winning prizes in competitions, participating in exhibitions, and showcasing their projects at various external platforms.
- These outcomes reflect enhanced technical skills, creativity, and real-world application of knowledge.

Patent Published

- Faculty members have successfully secured patents by utilizing the project laboratory facilities to develop innovative designs and technologies.
- The infrastructure and research support have enabled the transformation of ideas into patentable outcomes, contributing to academic excellence and technological advancement.

Table 7.5.3.1 Patent Published

Patent Published				
S. No.	Name of the Inventors	Title of the Invention	Date of Publication	Patent Application No.
1.	Dr. K. HelenPrabha Ms. P. Santhoshini Mr. Jaibalaji S. T	LAWNBOT: Automating Smart Lawn Care	06.06.2025	202541049196
2.	Dr. C. Shobana Nageswari Dr. M. Shakunthala Mr. Phanindra Reddy K	Intelligent Security System for Theft Prediction and Prevention in Jewellery Stores	06.06.2025	202541049198
3.	Dr. J. Jayaudhaya	Stock Price Prediction Using Machine Learning Techniques	20.09.2024	202441069719
4.	Dr. J. Sumithra	Accident Prevention and Black box System for Automobiles	20.09.2024	202441069722
5.	Dr. A. Chilambuchelvan	Smart Energy Meter with Daily Usage Reminder	22.03.2024	202241052903 A
6.	Ms. P. Santhoshini Dr. C. Bennila Thangammal Ms. R. Hemalatha	A Neonatal Baby Monitoring Device and the Method of Manufacturing the Same	22.03.2024	202241052901 A
7.	Mr. V. S. Prabhu Dr. C. Bennila Thangammal	IoT Based Automatic Library Management Robot	22.03.2024	202241052903 A
8.	Dr. J. Jayaudhaya	Double Check Fire Rescue System Using Artificial Intelligence	29.03.2024	202441022994
9.	Dr. A. Chilambuchelvan Dr. N. Vini Antony Grace Ms. G. Karthika	Wearable Coat for Coal Miner and A Method of Early Warning of Disaster and Health Parameters	10.05.2024	202441034075 A
10.	Dr. K. Helenprabha Ms. P. Santhoshini	Innovative Arduino Vacuum Robot: Make Home Smarter	10.05.2024	202441034074 A
11.	Dr, K. Helenprabha Dr. R. Aarthi	Detection of Brain Neoplasm Size by Modified Deep Neural Networks using Magnetic Resonance Images	10.05.2024	202441034740 A

Patent Granted

- Faculty members have successfully secured patent grants by utilizing the project laboratory facilities to develop innovative designs and technologies.
- The advanced infrastructure and research support have enabled the transformation of ideas into patentable outcomes, contributing to academic excellence and technological advancement.

Table 7.5.3.2 Patent granted

Patent Granted				
S. No.	Name of the Inventors	Title of the Invention	Date of Publication / Grant	Application No.
1.	Dr. K. K. Thyagharajan	A Method and System of Detecting A Fall Action of The Subject	25.12.2020/ 25.10.2024	202041054476 Patent Grant No: 553228
2.	Dr. A. Chilambuchelvan Ms. G. Karthika	AR Assistance for Instrument Operation and Calibration	19.02.2021/ 28.10.2024	202141006094 Patent Grant No: 553334
3	Dr. K. HelenPrabha Ms. G. Karthika Ms. R. Hemalatha	Covid Protection Device	31.12.2021/ 10.07.2023	202141059877 Patent Grant No: 438027
4.	Dr. D. Rukmani Devi	Machine Learning Based Finger Sleeve to Detect Heartbeat of Old Age Patients	07.08.2020 / 05.03.2024	202041032657 Patent Grant No: 519816
5.	Dr. A. Chilambuchelvan	Automated Agriculture Rover	03.12.2021/ 26.03.2024	202141053700 Patent Grant No: 530378
6.	Dr. K. K. Thyagharajan	Leaf Species Recognition System Based on Intersecting Cortical Model of Pulse Coupled Neural Network	28.5.2021 / 11.06.2024	201941048259 Patent Grant No: 541335
7.	Ms. Hemalatha R Dr. Bennila Thangammal C Dr. Ilamathi K Ms. Nathiya Devi K Ms. Santhoshini P	Smart Shopping Cart with Automated Billing System	04.02.2022/ 28.06.2024	202141061351 Patent Grant No: 543663

Student Accolades

- ·Students have achieved notable accolades by effectively utilizing the project laboratory to design and implement innovative solutions.
- Their hands-on experience and practical skills have led to winning prizes in competitions, participating in exhibitions, and gaining recognition for technical excellence.

Table 7.5.3.3 Student Accolades

S.No.	Name of the Student	Position (First, Second, & Third Prizes only)	Name of the Institution	Prize Amount
1	Harish J Kamalesh B Irudaya Nithesh Lokeshwaran	II	CMRIT	4000
2	Kamalesh B Irudaya Nithesh Lokeshwaran	II	VIT-Vellore	500
3	Dilipkumar T Gururajan. V Chandrasekar A Chinthakunta Lakshmi Narasimha Reddy	I	MGR University	3000
4	Jaibalaji St Krishna Vishwa C.B Navami Krishna R Madhumita B Mano Sundar S Harish Ramesh Kumar	I	SSN Engineering College	20000
5	Madhumita B E.Kaviyashree	II	Noida Ministry of electronics under Government of India(Online)	25000
6	Dilipkumar T Gururajan. V Chandrasekar A Chinthakunta Lakshmi Narasimha Reddy	II	MGR University	2000

RESEARCH LABORATORY:

The Research Laboratory of the Electronics and Communication Engineering (ECE) Department is equipped with advanced tools and modern software to support innovative research and development activities. The lab facilitates research in key areas such as communication systems, embedded systems, VLSI design, signal processing, Internet of Things (IoT). It provides an environment for faculty members and students to carry out high-quality research, publish technical papers in reputed journals, and undertake funded projects.The laboratory also encourages interdisciplinary research and collaboration with industries and research organizations. Students are guided to develop prototypes, test new ideas, and work on real-time applications, thereby enhancing their analytical, technical, and problem-solving skills. Overall, the Research Laboratory plays a vital role in promoting innovation, knowledge creation, and technological advancement within the department.

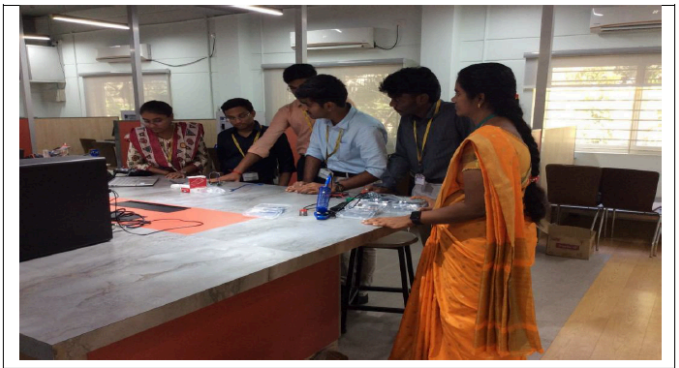


Fig 7.5.3.1 Research Laboratory

CENTRE OF EXCELLENCE

The Department has established a Centre of Excellence (CoE) to promote advanced learning, research, and innovation in emerging areas of Electronics and Communication Engineering. The CoE is equipped with state-of-the-art facilities, modern tools, and industry-relevant software to support skill development and research activities. It serves as a platform for students and faculty to work on cutting-edge technologies, undertake industry-oriented projects, and participate in internships, workshops, and certification programs.

The Centre of Excellence also fosters collaboration with industries and research organizations, enabling knowledge sharing and technology transfer. It plays a significant role in enhancing employability, encouraging entrepreneurship, and developing practical competencies among students through hands-on training, real-time problem solving, and innovative project development.

Table 7.5.3.1 Centre of Excellence

S.NO.	Name of the COE	Reason(s) for Creating Facility	Utilization
1	TELECOM	• The centre of excellence in Telecom aims to create a sustainable growth environment for the telecom and data communication sector by bridging the gap between academic knowledge and industry needs.	• Used for wireless communication, networking experiments, and telecom-based projects. • Enables hands-on training, research, consultancy, and industry interaction programs
		• This centre of excellence activities are committed to provide access to cutting-edge telecom technology and equipment, enabling practical learning and experimentation.	• Supports work in 4G/5G, optical communication, and signal processing domains.
		• The CoE provides training on the latest industry trends and technologies, making students job-ready and highly sought after by employers.	. • Utilized by faculty and students for 20–25 hours/week, with higher usage during projects and workshops
2	AUTOMOTIVE ELECTRONICS	• The Automotive Electronics Centre of Excellence (CoE), established in collaboration with KPIT Technologies, promotes knowledge creation through quality academic programs. • It provides a student-centric environment focused on practical and industry-oriented learning.	• Used by students for industry-oriented training in automotive systems. • Utilized 25–30 hours/week, with consistent usage during training sessions and internships.
		• The CoE develops skills in automotive electronics and embedded automotive systems. • It enhances student employability by aligning learning with industry requirements.	• Provides hands-on experience in embedded systems and real-time automotive applications. • Supports internships, industry projects, certifications, and system integration activities.
3	VLSI DESIGN	• The Centre of Excellence (CoE) in VLSI Design aims to promote best practices and standards in VLSI technology, ensuring quality, reliability, and industry compatibility. • It provides a specialized platform for Electronics and Communication students to gain expertise in chip design, verification, and fabrication concepts. • The CoE enhances knowledge in high-performance, low-power, and cost-effective electronic system design. • It plays a vital role in advancing modern technology by enabling efficient, scalable, and application-driven semiconductor	• Used by students for VLSI design projects, including mini and final year work • Provides hands-on experience in HDL coding, simulation, and chip design tools.. • Supports research activities, internships, and industry-oriented training programs. • Utilized 25–35 hours/week, with increased usage during project
4	EMBEDDED & IOT	• The Centre of Excellence (CoE) for Embedded & Internet of Things, established in collaboration with Tata Consultancy Services (TCS), focuses on developing industry-ready skills. • It offers training in embedded systems, IoT technologies, and smart application development. Students gain hands-on experience with real-time systems, sensors, controllers, and cloud platforms. • The CoE bridges the gap between academic learning and industry.	• Used by students across all years for mini and final year projects. • Provides hands-on training in Arduino, Raspberry Pi, Node MCU, and IoT . • Enables development of smart applications such as smart home, agriculture, and health monitoring, used 30-40 hrs/week for projects, Hackathons, and innovation activity

PO/PSO MAPPING

The CoE lab provides a platform for students to apply their engineering knowledge in practical scenarios, aligning with Program Outcomes (POs) through hands-on experiments, design activities, and prototype development. It strengthens Program Specific Outcomes (PSOs) by building domain-specific skills in areas such as IoT, embedded systems, and real-time applications. Additionally, the lab fosters innovation, problem-solving abilities, and industry readiness by offering experiential learning and project-based exposure.

TABLE NO. 7.5.3.2: PO/PSO MAPPING

Laboratory	PO/PSO'S	Justification
Project Laboratory	PO1,PO2, PO3, PO4,PO5,PO6,PO7,PO8,PO9,PSO1, PSO2	Enables application of theoretical concepts to real-time problems by designing and implementing projects using simulation tools and hardware platforms. Students participated & won the prize in Hackathon
Research Laboratory	PO1,PO2, PO3,PO4, PO5,PO6,PO12,PSO1, PSO2, PSO3	Promotes innovation and research skills by engaging students in paper publications, prototype development, and advanced research activities.
Industry Framed Syllabus	PO6, PO7, PSO1, PSO2,PSO3	Aligns academic curriculum with industry needs, achieved through updated content that enhances employability and practical knowledge.
Expert Lectures	PO1,PO8, PO10,PSO1,PSO2, PSO3	Provides real-world exposure through expert sessions, helping students understand industry trends and improve communication skills.
Technical Talk	PO9, PO10,PSO1,PSO2,PSO3	Develops presentation and teamwork skills by encouraging students to present technical topics and share knowledge.
Domain Expert Interaction	PO2, PO10,PSO1, PSO2, PSO3	Bridges academic and industry gaps through interactions with experts, enabling understanding of real-time challenges and solutions.
Mini-Project Expo	PO3, PO9, PO10, PSO1, PSO2	Encourages innovation and teamwork by showcasing student projects and receiving feedback from experts for improvement.
Industry-Supported Internship	PO5, PO6, PO7,PO9,PO11, PSO1, PSO2,PSO3	Provides practical industry exposure through real-time projects, enhancing technical skills and employability.

The students won the prize by effectively applying the knowledge and skills gained from their Program Outcomes (POs). Their strong understanding of Program Specific Outcomes (PSOs) helped them demonstrate technical expertise and problem-solving abilities. Through teamwork, communication, and innovative thinking, they achieved this success. This accomplishment highlights the quality of their academic learning and practical application.

Fig 7.5.3.6 Outcomes of Innovation of CoE

Fig 7.5.3.7 Outcomes of Innovation of IDEA LAB

PART E: First Year faculty and financial Resources

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

E1. First Year Student-Faculty Ratio (FYSFR)

Table No. E1.1: FYSFR details.

Year	Sanctioned intake of all UG programs (S4)	No. of required faculty (RF4= S4/20)	No. of faculty members in Basic Science Courses & Humanities and Social Sciences including Management courses (NS1)	No. of faculty members in Engineering Science Courses (NS2)	Percentage= No. of faculty members ((NS1*0.8) + (NS2*0.2))/(No. of required faculty (RF4)); Percentage= ((NS1*0.8) + (NS2*0.2))/RF
2023-24(CAYm2)	600	30	24	12	72
2024-25(CAYm1)	660	33	25	12	68
2025-26(CAY)	780	39	27	16	64

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	125533228	113034734	53297627	50759645	39769987	38611638	4960893	4816401
Library	3141240	1691080	4042554	3850051	2013757	1955104	849530	824786
Laboratory equipment	18658941	11582099	19365537	18443369	7425930	7209641	6267015	6084481
Teaching and non-teaching staff	256314653	248627814	228398527	217522407	210986214	204840984	190384552	184839371
Outreach Programs	1000000	967860	2000000	1944219	400000	327733	300000	334237
R&D	545000	616500	445000	943900	1255990	1219408	343443	333440
Training, Placement and	20177079	22914417	21146924	20139928	16043823	15576527	16178559	15707339
SDGs	260000	260000	260000	240000	218750	218750	207750	207750
Entrepreneurship	136196	136196	154600	154600	152678	152678	95678	95678
Others, specify/ Laboratory	334921178	289011337	339020144	322317037	301932734	293188375	226104463	218587872
Total	**760687515**	**688842037**	**668130913**	**636315156**	**580199863**	**563300838**	**445691883**	**431831355**

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	3440698	3401350	0	0	138000	146461	0	0
Software	36379	36379	36379	36379	32313	36379	32313	36379
SDGs	80000	80000	80000	60000	58750	58750	47750	47750
Support for faculty development	220000	80000	685600	526570	600000	520300	128000	127000
R & D	300000	100000	200000	305600	600000	611800	200000	318780
Industrial Training, Industry expert,	60000	0	60000	44205	60000	31000	60000	30000
Entrepreneurship, Laboratory	852776	785559	399600	403166	874703	909932	2186998	2052160
Total	**4989853**	**4483288**	**1461579**	**1375920**	**2363766**	**2314622**	**2655061**	**2612069**