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: 10688	**Date of Submission**: 04-06-2025

PART A- Profile of the Institute

A1.Name of the Institute: CMR Engineering College	
Year of Establishment : 2010	Location of the Institute: Kandlakoya(v), Medchal Road, Hyderabad, Telangana, INDIA-501401.
A2. Institute Address:CMR Engineering College,Kandlakoya Village, Medchal Road,Hyderabad - 501 401.	
City:Ranga Reddy	State:Telangana
Pin Code:501401	Website:www.cmrec.ac.in
Email:principal.cmrec@gmail.com	Phone No(with STD Code):08418-200037
A3. Name and Address of the Affiliating University (if any):	
Name of the University : JNTU Hyderabad	City: Hyderabad Urban
State : Telangana	Pin Code: 500085
A4. Type of the Institution: Autonomous CAY(2020-21)	
A5. Ownership Status: Self financing	

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

- No. of UG programs: **7**
- No. of PG programs: **2**

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	2021	2022	Artificial Intelligence and Data Science
2	Engineering & Technology	UG	Computer Science and Engineering	2010	--	Computer Science and Engineering
3	Engineering & Technology	PG	Computer Science and Engineering	2011	--	Computer Science and Engineering
4	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence & Machine Learning)	2020	--	Computer Science and Engineering (Artificial Intelligence and Machine Learning)
5	Engineering & Technology	UG	Computer Science and Engineering (Cyber Security)	2020	2023	Computer Science and Engineering (Cyber Security)
6	Engineering & Technology	UG	Computer Science and Engineering (Data Science)	2020	--	Computer Science and Engineering (Data Science)
7	Engineering & Technology	UG	Electronics & Communication Engineering	2010	--	Electronics and Communication Engineering
8	Engineering & Technology	UG	Information Technology	2017	2024	Information Technology
9	Engineering & Technology	PG	VLSI System Design	2014	--	Electronics and Communication Engineering

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

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

Name of the Department	Having Allied Departments	Name of the Program	Program Level
Computer Science and Engineering	Yes	Computer Science and Engineering	UG
Electronics and Communication Engineering	No	Electronics & Communication Engineering	UG

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

No Record

PART-B: Program information

B1. Provide the Required Information for the Program Applied For:

Table No. B1: Program details.
A. List of the Programs Offered by the Department:

SR.NO.	PROGRAM NAME	PROGRAM APPLIED LEVEL	YEAR OF START / YEAR OF CLOSED	SANCTIONED INTAKE	INCREASE/DECREASE INTAKE (if any)	YEAR OF INCREASE/DECREASE	CURRENT INTAKE	YEAR OF AICTE APPROVAL	AICTE/COMPETENT AUTHORITY ARROVAL DETAILS	ACCREDITATION STATUS	FROM	TO	NO. OF TIMES PROGRAM ACCREDITED	PROGRAM DURATION
1	Electronics & Communication Engineering	UG	2010 / --	120	Yes	2022	120	2022	EOA	Granted accreditation for 3 years for the period (specify period)	--	--	3	4

Sanctioned Intake for Last Five Years for the VLSI System Design	
Academic Year	**Sanctioned Intake**
2024-25	120
2023-24	120
2022-23	120
2021-22	240
2020-21	240
2019-20	240

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. Suman Mishra

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	240	240	240	240
N1=Total no. of students admitted in the 1st year minus the no. of students, who migrated to other programs/ institutions plus no. of students, who migrated to this program	120	120	120	240	240	240	240
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	14	14	28	24	24	24
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	6	8	9	16	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	142	143	284	264	264	264

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	120	6	105.00
2023-24 (CAYm1)	120	120	8	106.67
2022-23 (CAYm2)	120	120	9	107.50

Average [(ER1 + ER2 + ER3) / 3] = 106.39≡ 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	(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).	264.00	264.00	264.00
B=No. of students who graduated from the program in the stipulated course duration	213.00	210.00	208.00
Success Rate (SR)= (B/A) * 100	80.68	79.55	78.79

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 79.67

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)	7.10	6.51	5.94
Y=Total no. of successful students	125.00	129.00	250.00
Z=Total no. of students appeared in the examination	120.00	120.00	240.00
API [X*(Y/Z)]	7.40	7.00	6.19

Average API[(AP1+AP2+AP3)/3] : 6.86

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

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

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
X=(Mean of 2nd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2rd year/10)	6.80	6.23	5.21
Y=Total no. of successful students	142.00	274.00	264.00
Z=Total no. of students appeared in the examination	143.00	278.00	264.00
API [X * (Y/Z)]	6.75	6.14	5.21

Average API [(AP1 + AP2 + AP3)/3] : 6.03

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

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

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
X=(Mean of 3rd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 3rd year/10)	7.33	6.31	5.34
Y=Total no. of successful students	273.00	258.00	262.00
Z=Total no. of students appeared in the examination	274.00	264.00	262.00
API [X*(Y/Z)]:	7.30	6.17	5.34

Average API [(AP1 + AP2 + AP3)/3] : 6.27

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	264.00	264.00	264.00
X=No. of students placed	165.00	162.00	159.00
Y=No. of students admitted to higher studies	45.00	42.00	36.00
Z= No. of students taking up entrepreneurship	3.00	2.00	2.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	80.68	78.03	74.62

Average Placement Index = (P_1 + P_2 + P_3)/3: 77.78 Placement Index Points:

PART C: Faculty Details in Department and Allied Departments

(Data to be filled in for the Department and Allied Departments)

C1. Faculty details of Department and Allied Departments

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

Sr.No	Name of the Faculty	PAN No.	Highest degree	University	Area of Specialization	Date of Joining in this Institution	Experience in years in current institute	Designation at Time Joining in this Institution	Present Designation	The date on which Designated as Professor/ Associate Professor if any	Nature of Association (Regular/ Contract/ Ad hoc)	Currently Associated (Y/N)	In case of NO, Date of Leaving	IS HOD?
1	Dr. Suman Mishra	XXXXXXX58N	Ph.D	Sathyabama University, Chennai	Applied Electronics	01/07/2017	7.10	Professor	Professor		Regular	Yes		Yes
2	Dr. S Rama Kishore	XXXXXXX28M	Ph.D	Sri Satya Sai University of Techbology and Medical Sciences	Embedded Systems	24/06/2013	11.10	Assistant Professor	Associate Professor	02/07/2018	Regular	Yes		No
3	Vaseem Ahmed Qureshi	XXXXXXX05K	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI SYSTEM DESIGN	01/07/2011	13.10	Assistant Professor	Associate Professor	01/07/2013	Regular	Yes		No
4	Dr.Malothu Amru	XXXXXXX10R	Ph.D	Sri Satya Sai University of Technology and Medical Sciencies	Electronics and Communication Engineering	03/12/2011	13.5	Associate Professor	Professor	08/09/2020	Regular	Yes		No
5	Dr. Poongodi Subramanayan	XXXXXXX60M	Ph.D	Anna University	Communication Engineering	20/06/2017	7.10	Professor	Professor		Regular	Yes		No
6	Dr. B. Siva Kumar Reddy	XXXXXXX20G	Ph.D	National Institute of Technology,Warangal	Electronics and Communication Engineering	13/06/2019	5.10	Associate Professor	Professor	10/06/2024	Regular	Yes		No
7	Dr. Telugu Satya Narayana	XXXXXXX92F	Ph.D	Sri Satya Sai University of Technology and Medical Sciencies	VLSI System Design	17/06/2011	13.10	Assistant Professor	Associate Professor	01/07/2016	Regular	Yes		No
8	Dr. Divya Gampala	XXXXXXX13K	Ph.D	Shri Jagdishprasad Jhabarmal Tibrewala university	VLSI System Design	18/06/2011	13.10	Assistant Professor	Associate Professor	01/07/2017	Regular	No	10/05/2025	No
9	Dr.K. Sravan Abhilash	XXXXXXX89J	Ph.D	Veer Bahadur Singh Purvachanchal University,U.P	VLSI System Design	25/06/2018	6.10	Assistant Professor	Associate Professor	01/07/2022	Regular	Yes		No
10	Dr.A.Pramod Kumar	XXXXXXX07R	Ph.D	Kalinga Institute of Industrial Technology Deemed to be University	VLSI System Design	01/07/2024	0.10	Associate Professor	Associate Professor		Regular	Yes		No
11	Mr. Biroju Papachary	XXXXXXX62L	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Computers & Communication Engineering	01/07/2011	13.10	Assistant Professor	Associate Professor	01/07/2016	Regular	Yes		No
12	Mrs. K.Vani	XXXXXXX40C	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	30/06/2012	12.10	Assistant Professor	Associate Professor	02/07/2018	Regular	Yes		No
13	Mrs.G.Kalpana	XXXXXXX23D	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	10/06/2013	11.11	Assistant Professor	Associate Professor	01/07/2017	Regular	Yes		No
14	Mr. M. Raja	XXXXXXX94L	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Electronics and Communication Engineering	14/07/2016	8.9	Assistant Professor	Associate Professor	20/07/2021	Regular	Yes		No
15	Mrs. B. Madhu Latha	XXXXXXX56D	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	25/06/2018	6.10	Assistant Professor	Associate Professor	20/07/2021	Regular	Yes		No
16	Mrs.G. Swathi	XXXXXXX93J	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Electronics and Communication Engineering	04/07/2022	2.10	Associate Professor	Associate Professor		Regular	Yes		No
17	Mr.R.Sridhar	XXXXXXX91F	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	04/06/2015	9.11	Assistant Professor	Assistant Professor		Regular	Yes		No
18	Mrs. A. Sravani	XXXXXXX49F	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	04/06/2015	9.11	Assistant Professor	Assistant Professor		Regular	Yes		No
19	Mrs.G.Pravallika	XXXXXXX71J	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	06/11/2015	9.6	Assistant Professor	Assistant Professor		Regular	Yes		No
20	Mrs. M. Prathima	XXXXXXX77N	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	11/06/2015	9.11	Assistant Professor	Assistant Professor		Regular	Yes		No
21	Ms.B.Bhavya	XXXXXXX61C	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	04/07/2016	8.10	Assistant Professor	Assistant Professor		Regular	Yes		No
22	Mr. P. Chander	XXXXXXX93K	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	14/07/2016	8.9	Assistant Professor	Assistant Professor		Regular	Yes		No

23	Ms. Prodduturu Rani	XXXXXXX25B	M.E/M.Tech	Jawaharlal Nehru Technological University Ananthapuram	VLSI	19/06/2017	7.10	Assistant Professor	Assistant Professor		Regular	Yes		No
24	Mrs. Panduga Kavitha	XXXXXXX42D	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI & Embedded Systems	01/07/2017	7.10	Assistant Professor	Assistant Professor		Regular	Yes		No
25	Mr.K.Subramanyam Chari	XXXXXXX91C	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	01/07/2017	7.10	Assistant Professor	Assistant Professor		Regular	Yes		No
26	Mr. S. Sudhakar	XXXXXXX90D	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI	14/06/2018	6.10	Assistant Professor	Assistant Professor		Regular	Yes		No
27	Mrs.K. Srirekha	XXXXXXX22L	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	14/06/2018	6.10	Assistant Professor	Assistant Professor		Regular	Yes		No
28	Mrs. D. Latha	XXXXXXX55J	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	25/06/2018	6.10	Assistant Professor	Assistant Professor		Regular	Yes		No
29	Mr. P. Goverdhan	XXXXXXX36N	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Systems&Signals Processing	02/07/2018	6.10	Assistant Professor	Assistant Professor		Regular	Yes		No
30	Ms. Laddhiperla Lavanya	XXXXXXX52H	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	06/07/2018	6.10	Assistant Professor	Assistant Professor		Regular	Yes		No
31	Mrs.E.Bakya Lakshmi	XXXXXXX72N	M.E/M.Tech	Anna University	Optical Communication	06/07/2018	6.9	Assistant Professor	Assistant Professor		Regular	No	03/05/2025	No
32	Dr. Bhasker Dappuri	XXXXXXX68B	Ph.D	Indian Institute of Technology,Madras	Communication Engineering	29/06/2015	8.10	Associate Professor	Professor	15/06/2020	Regular	No	22/05/2024	No
33	Dr. Prithivirajan Velraju	XXXXXXX66M	Ph.D	Anna University	Communication Systems	13/06/2017	6.11	Professor	Professor		Regular	No	22/05/2024	No
34	Dr.E.Nagabhooshanam	XXXXXXX52E	Ph.D	Jawaharlal Nehru Technological University Hyderabad	Electronics and Communication Engineering	01/07/2014	8.11	Professor	Professor		Regular	No	30/05/2023	No
35	Dr. Nalabathula Aravinda	XXXXXXX50A	Ph.D	Shri Jagdishprasad Jhabarmal Tibrewala university	Wireless and Mobile Communications	20/06/2012	12.10	Assistant Professor	Associate Professor	02/07/2018	Regular	No	03/06/2024	No
36	Mr.V.Santhosh Kumar	XXXXXXX23C	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	21/08/2023	1.8	Assistant Professor	Assistant Professor		Regular	Yes		No
37	Mr. Y. Prasad	XXXXXXX70H	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	11/06/2015	9.11	Assistant Professor	Assistant Professor		Regular	No	22/05/2024	No
38	Mr.A.V.N.Mahesh	XXXXXXX07F	M.E/M.Tech	Jawaharlal Nehru Technological University Ananthapur	DECS	01/07/2017	7.10	Assistant Professor	Assistant Professor		Regular	No	20/05/2024	No
39	Mr. K. Anil Kumar	XXXXXXX74P	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	01/12/2017	7.5	Assistant Professor	Assistant Professor		Regular	No	27/05/2024	No
40	Mr. D. Veera Swamy	XXXXXXX53L	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Electronics and Communication Engineering	01/07/2019	4.11	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No
41	Mr. K. Ganesh	XXXXXXX37L	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	01/07/2019	5.10	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No
42	Mrs. K. Anusha	XXXXXXX79F	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	04/07/2022	2.10	Assistant Professor	Assistant Professor		Regular	No	30/05/2023	No
43	Mr. N. Dhanunjaya Rao	XXXXXXX99H	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	25/06/2018	6.10	Assistant Professor	Assistant Professor		Regular	No	23/05/2023	No
44	Mrs. Cheruku Hariveena	XXXXXXX27L	M.E/M.Tech	Sathyabama University	Embedded Systems	25/06/2018	5.10	Assistant Professor	Assistant Professor		Regular	No	22/05/2024	No
45	Mr. Rathod Virender	XXXXXXX64B	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Electronics and Communication Engineering	16/06/2021	3.10	Assistant Professor	Assistant Professor		Regular	No	30/05/2023	No
46	Mr.Ch.Venkateswarlu	XXXXXXX65N	M.E/M.Tech	Osmania University	Microwave&Radar Engineering	13/06/2017	7.10	Assistant Professor	Associate Professor	08/09/2020	Regular	No	22/05/2023	No
47	Mr. Samala Vamshi	XXXXXXX12N	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Electronics and Communication Engineering	14/07/2016	8.9	Assistant Professor	Assistant Professor		Regular	No	22/05/2023	No

48	Mr. A.V.Vinod Kumar	XXXXXXX81B	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Digital Systems & Computer Electronics	18/06/2015	9.10	Assistant Professor	Associate Professor	08/09/2020	Regular	No	31/05/2023	No
49	Mrs. N. Yeshaswini	XXXXXXX53R	M.E/M.Tech	Jawaharlal Nehru Technological University Ananthapur	VLSI & Embedded Systems	02/06/2021	2.11	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No
50	Mr. M. Naveen	XXXXXXX63R	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	04/07/2022	0.10	Assistant Professor	Assistant Professor		Regular	No	30/05/2023	No
51	Mr. G. Upender	XXXXXXX88E	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	01/07/2022	0.10	Assistant Professor	Assistant Professor		Regular	No	30/05/2023	No
52	Mrs. Methuku Mounika	XXXXXXX64N	M.E/M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	01/07/2022	0.10	Assistant Professor	Assistant Professor		Regular	No	30/05/2023	No
53	Aluri Gopi	XXXXXXX07L	M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI & Embedded Systems	20/07/2018	6.10	Assistant Professor	Assistant Professor		Regular	Yes		No
54	Ms. Chodisetti Priyanka	XXXXXXX32K	M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	01/07/2017	7.10	Assistant Professor	Assistant Professor		Regular	No	10/05/2025	No
55	Mrs. N. Lakshmidevi	XXXXXXX64D	M.Tech	Osmania University	Digital Systems	25/06/2018	6.10	Assistant Professor	Associate Professor	25/06/2021	Regular	No	10/05/2025	No
56	Mrs.T.Jayanthi	XXXXXXX03N	M.Tech	Jawaharlal Nehru Technological University Ananthapuram	Embedded Systems	20/06/2016	8.10	Assistant Professor	Assistant Professor		Regular	No	10/05/2025	No
57	Mr.A.Naresh	XXXXXXX11J	M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	27/06/2016	8.10	Assistant Professor	Assistant Professor		Regular	No	17/05/2025	No
58	Mrs.K.Sravya	XXXXXXX58P	M.Tech	Jawaharlal Nehru Technological University Hyderabad	VLSI System Design	04/07/2016	8.10	Assistant Professor	Assistant Professor		Regular	No	10/05/2025	No
59	Mrs.D.MaryPavani	XXXXXXX93M	M.Tech	Jawaharlal Nehru Technological University Hyderabad	Embedded Systems	01/07/2017	7.10	Assistant Professor	Assistant Professor		Regular	No	10/05/2025	No

Table No.C2: Faculty details of Allied Departments for the past 3 years including CAY.

C2. Student-Faculty Ratio (SFR)

No. of UG(Engineering) programs in Department including allied departments/ clusters (UGn):
UG1=1st UG program
UGn=nth UG program
B= No. of Students in UG 2nd year (ST)
C= No. of Students in UG 3rd year (ST)
D= No. of Students in UG 4th year (ST)
No. of PG (Engineering) programs in Department including allied departments/ clusters (PGm):
PG1=1st PG program.
PGm=mth PG program
A= No. of Students in PG 1st year
B= No. of Students in PG 2nd year
Student Faculty Ratio **(SFR)** = S/F
S= No. of students of all programs in the Department including all students of allied departments/clusters.
No. of students (ST)=Sanctioned Intake (SA)+ Actual admitted students via lateral entry including leftover seats (L) if any (limited to 10 % of SA)
Students who admitted under supernumerary quotas (SNQ, EWS, etc) will not be considered in calculating SFR value. Those students are exempted.
F=Total no. of regular or contractual faculty members (Full Time) in the Department, including allied departments/clusters (excluding first year faculty (The faculty members who have a 100% teaching load in the first-year courses)).

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

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

Description	**CAY(2024-25)**	**CAYm1 (2023-24)**	**CAYm2 (2022-23)**
UG1.B	132	132	264
UG1.C	132	264	264
UG1.D	264	264	264
UG1: Electronics & Communication Engineering	**528**	**660**	**792**
PG1.A	12	12	12
PG1.B	12	12	12
PG1: VLSI System Design	**24**	**24**	**24**
DS=Total no. of students in all UG and PG programs in the Department	552	684	816
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=** 552	**S2=** 684	**S3=** 816
DF=Total no. of faculty members in the Department	39	48	57
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=** 39	**F2=** 48	**F3=** 57
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= 14.15**	**SFR2= 14.25**	**SFR3= 14.32**
Average SFR for 3 years	**SFR= 14.24**		

C3. Faculty Qualification

- Faculty qualification index (FQI) = 2.5 * [(10X +4Y)/RF] where

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

Table No.C3.1: Faculty qualification.

Year	X	Y	RF	FQ = 2.5 x [(10X + 4Y) / RF)]
2024-25(CAY)	9	30	27.00	19.44
2023-24(CAYm1)	11	37	34.00	18.97
2022-23(CAYm2)	12	45	40.00	18.75

C4. Faculty Cadre Proportion

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

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

Year	Professors		Associate Professors		Assistant Professors	
	Required RF1	Available AF1	Required RF2	Available AF1	Required RF3	Available AF3
2024-25	3.00	4.00	6.00	5.00	18.00	30.00
2023-24	3.00	5.00	7.00	6.00	22.00	37.00
2022-23	4.00	6.00	9.00	6.00	27.00	45.00
Average	RF1=3.33	AF1=5.00	RF2=7.33	AF2=5.67	RF2=22.33	AF2=37.33

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. Vineeth Gulapally	Sr. Technical Trainer	Pyramid	Advance Python	54.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Siva Kumar	Sr. Technical Trainer	Pyramid	Full Stack Java	58.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Amit Bansal	CEO	Smart Interviews	Competitive C Programming, Data Structures and Algorithms	52.00

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	13	9	12
2	No. of peer reviewed conference papers published	13	22	24
3	No. of books/book chapters published	6	4	6

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.K. Sravan abhilash	Mr.B. Papachary	ECE	Digital agriculture platform for Precision advisories	Agriculture finance group of companies	1 year	3.05
Dr Suman Mishra	Dr T Satyanarayana	ECE	Advanced Footstep power Generation system using RFID for charging	Anuvega Power electronics Pvt Ltd	1 year	4.15
						Amount received (Rs.):7.20

(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. S.Ramakishore reddy	Mr K Subramanyam chary	Electronics & Communication Engineering Department	Design of Tunnel FET Based SRAM for IoT Applications	Moschip technologies	1 year	3.43
Dr S Poongodi	Dr G Divya	Electronics & Communication Engineering Department	Fingerprint Based Bank Locker System	Ineda systems	1 year	3.67
Dr M Vijay karthik	Mr R Sridhar	Electronics & Communication Engineering Department	Solar Energy Based Rickshaw Ambulance for Remote Locations	MSME IDEA HACKATHON 1.0	2 year	15.00
Dr A sreenivasula reddy	Dr suman mishra	Electronics & Communication Engineering Department	Device to Improve Switching Speed and Provide Better Sensitivity at Low Frequencies	MSME IDEA HACKATHON 1.0	2 year	15.00
						Amount received (Rs.):37.10

(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 V Prithvirajan	Mr Vaseem ahmed Quershi	Electronics & Communication Engineering Department	Video Communication over Ad-hoc network: a case study for natural disaster	Mivi technologies pvt ltd	2 years	3.60
Dr B Siva kumar reddy	Mrs G Kalpana	Electronics & Communication Engineering Department	Multimedia Signal Processing system for next-generation networks	Srilin technologies	1.5 years	3.20
						Amount received (Rs.):6.80

Total Amount (Lacs) Received for the Past 3 Years: 51.10

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.K.Sravan Abhilash	Mr.V Santhosh	Electronics & Communication Engineering Department	Comparative study on SVD, DCT and fuzzy logic of NOAA satellite data to detect convective clouds	MTE Industries Pvt. Ltd., Hyderabad	8 months	1.05
Mr.B.Papachary	Mr P Chander	Electronics & Communication Engineering Department	Hybrid PAPR reduction technique in OFDM system Performance	Sun Seas Tech	10 months	1.81
Mr.Vaseem ahmed Qureshi	Mr.S.Sudhakar	Electronics & Communication Engineering Department	Universal shift register designed at low supply and low power voltages in different nm FinFET using multiplexer	Vertulonix	11 months	1.50
Dr.Poongodi Subramanian	Mrs .Ch.Priyanka	Electronics & Communication Engineering Department	Novel Integrated Approach to Distributed Fault Diagnosis and Fault- Tolerant Control for Plant Wide Processes	Prabhava Organics Pvt.Ltd	2 years	2.18
Dr T Satyanarayana	Mr P Goverdhan	Electronics & Communication Engineering Department	Home Automation & Security System	Innostec Solutions	1 year	3.05
						Amount received (Rs.):9.59

(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.T.Satyanarayana	Mr. K.Subramaniam Chari	Electronics & Communication Engineering Department	AI-Driven Drone Surveillance for Forest Protection and Conservation	SAK Informatics	2 years	4.05
Dr.S.Ramakishore reddy	Mr.M.Raja	Electronics & Communication Engineering Department	Cost effective solutions for smart agriculture	Vincense Software solutions Pvt.ltd	1 year	3.32
						Amount received (Rs.):7.37

(CAYm3)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Dr V Prithvirajan	Mrs.G. Kalpana	Electronics & Communication Engineering Department	Garbage collector with smart segregation	Technofection Software Pvt Ltd	2.5 years	1.51
Dr B Sivakumar reddy	Mr.B.Papachary	Electronics & Communication Engineering Department	Design and development of Visitor Management System	Mythri Techno Solutions Pvt Ltd	2 years	1.32
Dr C Syamsundar	Dr Suman mishra	Electronics & Communication Engineering Department	Hybrid Electric Vehicles	AICTE-SPICES (Scheme for Promoting Interests, Creativity and Ethics among Students)	1	1.00
						Amount received (Rs.):3.83

Total amount (Lacs) received for the past 3 years: 20.79

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 T.Satyanarayana	Design of a User-Centric Smart Wheelchair	1 Year	1.00	0.95	Improved Safety & Navigation, Higher User Satisfaction & Usability
Dr.K.Sravan Abhilash	Smart Fish Aquarium using Embedded system	10 months	0.60	0.50	Automated Feeding & Portion Control and Real-Time Water Quality Monitoring
			Amount received (Rs.): 1.60		

(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 Suman Mishra	Portable baby incubator using Raspberry pi	1 Year	0.95	0.88	Real-time sensing of temperature, humidity, oxygen/CO_2 levels, and optionally heart rate or respiration rate
Dr S Ramakishore reddy	IoT face recognition AI Robot using Embedded system	1 Year	1.05	0.82	real-time, more than 95% accurate user identification with secure remote monitoring and adaptive interaction, all processed efficiently at the edge
			Amount received (Rs.): 2.00		

(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 D Bhasker	Automated attendance system based on face recognition and Biometric	10 months	1.30	1.15	provides fast, accurate, and secure tracking of attendance while minimizing fraud and manual effort
Dr B.Siva kumar Reddy	AI Based Surveillance system for detection of vehicles without helmet using YOLO Technology	1 Year	1.20	1.00	enables real-time, accurate detection of vehicles with riders not wearing helmets, enhancing traffic rule enforcement and road safety
			Amount received (Rs.): 2.50		

Total amount (Lacs) received for the past 3 years : 6.10

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	ELECTRONIC CIRCUITS LAB/ LINEAR AND DIGITAL IC APPLICATIONS LAB	3	Digital Storage Oscilloscopes (0-50 Mhz), CRO's(0-30) MHz Dual Channel, Function Generators (0-10) MHz , Regulated power supply (0-30 v), Multimeters , Voltmeters (0-50)V, Voltmeters(0-30)V, Voltmeters(0-1)V, Voltmeters(0-100V), Ammeters(0-10)ma, Decade Resistance Box, Decade Capacitance Box, Decade Inductance Box, Ammeters(0-20)ma, Ammeters(0-200)µa, Experimental Trainer kits. CROs (0-30 MHz) dual channel, Function Generator (0-10MHz). 0-5 v Regulated power supply , Bread Boards / General purpose IC Trainer Kits , Multimeter , 741-opAmpIC, 555 timer IC, 565 PLL IC, 723-Voltage regulated IC7805-7809-7912 IC's Digital Storage Oscilloscopes (0-50 Mhz) Signal Generators (0-3/10) MHZ , CRO's (0-30MHZ)	UG-ECE-II-I-Se	Mr.P.NARASIMH	SENIOR TECHI	DIPLOMA
2	SIMULATION LAB	1	Intel core I3-6100 CPU@3.70 GHz Pentium dual core processor computers, RAM 4 GB, Hard Disk 424 GB, D-Link 24P &24P&16P& 8P Switches, LCD Projector, 10kva UPS, Battery backup amarraja quanta smf batteries 12V 26AH. ML-MATLAB Software Version 8.3, 9.0. CM -Communication System Toolbox Version 5.6,6.2, DS-DSP System Toolbox Version 8.6,9.2, SG-Signal Processing Toolbox Version 6.21,7.2, SL-Simulink Version 8.3,8.7, IP- Image processing tool box Version 9.4, TMC 320 VC6713, TM320C6748 based floating point trainer kits with CCS, LCD Projector, Cortex-M3	UG-ECE-II-I-Se	Mrs.R.G.MAMA	SENIOR TECHI	B.E
3	DIGITAL LOGIC DESIGN LAB / ANALOG AND DIGITAL COMMUNICATIONS LAB	3	0-30 V Regulated Power supply , CROs (0-30 MHz)Dual channel , Bread Board/General Purpose IC Trainer kits , Multimeters	UG-ECE-II-I-Se	Mr.D.MADHAV	LAB ASSISTAN	DIPLOMA
4	MICROPROCESSORS AND MICROCONTROLLERS LAB	1	Intel(R) core(TM) CPU G2020 processor 2.90 GHz computers with RAM 2GB, 424 GB Hard Disk, LCD Projector, D-Link 16P&16P&8P switches, 6 kva UPS, Battery backup access quanta smf batteries 12V 26AH. 8086 kit , 8051 kit , Interfacing 7 segment display to 8051 , Interfacing Matrix keypad to 8051 , 8 bit ADC interface 8051 , DAC interface to 8051 , CRO's 0-30 MHz, Printer.	UG-ECE-III-I-S	Mr.M.NAGARAJ	SENIOR TECHI	ITI
5	VLSI DESIGN LAB	1	Intel core i5-4690s CPU @3.20 GHz *4 64 bit with 8 GB RAM with Hard Disk 491 GB Computers, Xilinx software (licensed), Cadence software (licensed), FPGA Kits, 32 bit pattern generator and logic analyzer, LCD Projector, Printer.	PG-VLSID-I-I-S	Mr.A.RAHUL	LAB ASSISTAN	DIPLOMA
6	MICROWAVE AND OPTICAL COMMUNICATION LAB	3	Klystron/ Gunn diode based Microwave bench setups including corresponding Power Supply, Gunn diode based microwave bench setup including Gunn Power Supply , Klystron based Microwave bench setup including Klystron Power Supply , Micro Ammeter(0-500µA) , VSWR meter , Microwave Components: a) Slotted Section, b) Magic T junction, c) Circulator, d) Directional Couplers for 2 directivities, e) Attenuators for 2 different attenuations, f) Matched termination , E- Plane T junction , H-Plane T junction , PN detector mounts , Fiber Optical analog Transmitter kit , Fiber Optical analog Receiver kit , Laser diode kit , Laser diode transmitter kit , Fiber Optical Digital Transmitter kits, Fiber Optical Digital Receiver kits , Multimeters , Numerical Aperture kit.	UG-ECE-IV-I-S	Mr.T.SRINIVAS	SENIOR TECHI	ITI

7	BASIC ELECTRICAL ENGINEERING LAB-I	3	Cathode ray oscilloscope (0-50 MHz) , Digital ammeter (0-200mA) , Digital ammeter (0-200μA) , Digital voltmeter (0-20V) , Regulated power supply (0-20V/2A), DC Shunt motor (5HP,220 V, 20A, 1500 rpm) , Voltmeter (0-300/600V) MI , Ammeter (0-5/10 A) MI , Wattmeter (5/10A, 150/300V) LPF , Wattmeter (5/10A, 150/300V) UPF , Three phase auto transformer (415/0-470V, 15A) , Single phase auto transformer (230/0-270V, 10A) , Three phase induction motor (3kvA, 415V, 4A, 1440 rpm) , Three phase alternator set (415V, 4A, 1500 rpm) , Single phase transformer (2kVA, 220V/ 220V) , Rheostats (0-370 Ω /1.7 A) , Voltmeter (0-150/300V) MI , Ammeter (0-2 A) MC , Tachometer(0-9999 rpm) , Capacitor (47μF) , Ammeter (0-20A) MC , Voltmeter (0-300) MC , Three Phase Transformer (0-415V,10A) , Three Phase Inductive load (10A).	UG-AI&ML-I-I-S	Mr. M. VENKAT/	SENIOR TECHI	ITI
8	BASIC ELECTRICAL ENGINEERING LAB-II	3	DC Shunt Motor (5HP,220V,20A,1500rpm) , DC Shunt Motor (3HP,220V,12A,1500rpm) 3- φ Alternator (3.5KW/KVA, 1500RPM, 4A, 415V) , Single Phase Transformer 230V/115V , Ohms Law kit , KVL and KCL kit , Transient Response of Series RL and RC circuits using DC excitation kit , Transient Response of RLC Series circuit using DC excitation kit , Resonance in series RLC circuit kit , Calculations and verification of impedance and current of RL,RC and RLC series circuit Kit , 1-φ Variac (0-270V, 15A) , Ammeter (0-1/5,10)A MI , Decade R, L, C boxes , Ammeter (0-1) A- MI , Voltmeter(0-150)V-MI , Wattmeter 150v/1A/LPF , 3-φ induction motor(5HP, 400V,7.5A, 1440RPM) , Voltmeter(0-600)V-MI , 3- φ Variac 440V/0-470V/20A , Watmeter (UPF) 660V/10A , DC Compound motor (5HP,220V,20A,1500RPM) , Ammeter (0-25) A- MC , Ammeter (0-2) A- MC , Voltmeter(0-300)V-MC , Rheostat 370Ω /1.7 A , Tachometer(Digital) , Voltmeter (0-300V) MI , 3- φ Transformer(0-415V, 20A) , Choke 80W/0.5A , Single phase resistive load (0-270V/20A) , Three phase resistive load	UG-DS-I-I-3/12	Mr. M.ANIL KUI	LAB ASSISTAN	ITI
9	BASIC ELECTRICAL ENGINEERING LAB-III	3	Ohms law kit-HSN:8542 KVL and KCL kit- HSN:8542 Experimental setup for three phase transformer HSN: 8501, b) 3-ph resistive load HSN:8533 c) 3-Ph Auto transformer HSN: 8504 Mechanical loading brake arrangement with drum Pully, Friction belt and 2nos. Of dial type spring balances for availabe DC Shunt motor Experimental setup for 3-ph Induction motor (IM with mechanical loading, friction belt and 2 no. of 50ks spring balances Wattmeter 600V,20A UPF HSN:9030 Digital Tachometer 2000RPM HSN: 9029 Rheostats- 370ohms/1.7A HSN:8533 Ammeter (0-5/10A) MI HSN: 9030 Ammeter (0-1)A MI HSN:9030 Voltmeter(0-600)V MI HSN:9030 Ammeter(0-2A) MC HSN:9030 Voltmeter(0-300)V MI HSN:9030 Voltmeter(0-300)V MC HSN:9030 Digital DC Ammeter 200mA HSN:8542 Digital DC Voltmeter 20V HSN:8542 Digital AC Ammeter 200mA HSN:8542 Digital AC Voltmeter 20V HSN:8542 Digital AC Ammeter 20mA HSN:8542 Regulated Power Supply (0-20V/2A)HSN:8542 Setup for 3-ph Alternator a)DC Shunt motor b) 3point starter HSN:8536 c) Rheostat HSN: 8533 d) Accessories HSN:8501	UG-ECE-I-I-2/1	Mr. Ramesh Ch	LAB ASSISTAN	DIPLOMA
10	ANALOG AND DIGITAL ELECTRONICS LAB-I	3	Cathode Ray Oscilloscope (0-30Hz) , Function generators (0-1 MHz) , Regulated power supply (0-30 V) , Clock Generator using NAND/NOR gates Trainer Kits , Synchronous and Asynchronous Counters using flip-flops Trainer Kits, Universal Gates Trainer Kits , Halfwave and Fullwave rectifier with and without filter , Fixed 5 v power supply boards , General purpose analog, Digital IC trainer kits , Ammeter (0-200mA) , Multirange Ammeter (0200μA/2/20/200mA) Multirange Voltmeters (0-200mV/2 /20/200V) , Logic gates Trainer Kits , Design a 4 Bit Adder/Subtractor Trainer Kits Realization of Logic Gates using DTL,TTL, ECL and CMOS logic trainer Kits.	UG-CSE(AI&M	Ms.R.DEEPIKA	LAB ASSISTAN	B.TECH
11	ANALOG AND DIGITAL ELECTRONICS LAB-II	3	Clock Generator using NAND/NOR gates Trainer Kits , Synchronous and Asynchronous counters using flip-flops Trainer Kits, Universal Gates Trainer Kits , Halfwave and Fullwave rectifier with and without filter , Regulated power supply (0-30 V) , Cathode Ray Oscilloscope (0-30Hz) , Function generators (0-1 MHz) , Fixed 5 v power supply boards , General purpose analog, Digital IC trainer kits , Ammeter (0-200mA) , Multirange Ammeter (0200μA/2/20/200mA), Multirange Voltmeters (0-00mV/2/20/200V) Logic gates Trainer Kits , Design a 4 Bit Adder/Subtractor Trainer Kits, Realization of Logic Gates using DTL,TTL, ECL and CMOS logic trainer Kits.	UG-IT-II-I-Sem	Mr.G.DEEPAK	LAB ASSISTAN	DIPLOMA
12	HARDWARE & SOFTWARE PROJECT LAB/ RESEARCH& DEVELOPMENT LAB	4	Computers with OS Latest Specification, Xilinx software(licensed), Cadence (licensed), Raspberry PI and Arduino UNO boards, 3D Printer , MATLAB Software Version 9.0(licensed), FPGA Kits, DSP kits, Cortex-M3 Control Board Set with built in IDE and Arduino IDE .Printer.	PG & UG-I-Ser	Mr.B.NITHISH F	LAB ASSISTAN	B.TECH

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	ELECTRONIC CIRCUITS LAB/ LINEAR AND DIGITAL IC APPLICATIONS LAB	General Laboratory Rules. > Safety Guidelines and Instructions are displayed in the laboratory. > Entry Rules: Only authorized students and staff are Permitted to enter the laboratory. > Students are briefed on essential safety precautions and procedures before the commencement of any laboratory session. > Dress Code: Students must wear apron and avoid loose garments or jewelry that could pose safety hazards. > Identification Tags: Students and staff must display their ID cards while in the laboratory. > The use of mobile phones inside the laboratory is strictly prohibited for safety. Electrical Safety. > Electrical networks are well designed in view of safety. > Power Supply Awareness: Ensure power supplies are turned off before making or modifying any circuit connections for safety. > Emergency Power shutdown facility is provided. > Electrical caution Symbols are displayed. > Equipment Check: Inspect devices, wires, and components for any damage before use. > Earthing: Proper earthing/grounding is provided for all equipment to prevent electric shocks. > Fuse Protection: Ensure all devices are equipped with appropriate fuses or circuit breakers. > Servo stabilizer (5KVA) installed for controlling voltage fluctuations for safety. Component Handling. > Thermal Safety: Allow heated components, such as resistors or soldering irons, to cool before touching. > Polarity Checks: Verify the polarity and ratings of capacitors, diodes, and transistors before using them in circuits. > Static Precautions: Use anti-static mats while handling sensitive components like MOSFETs or ICs. Soldering Safety. > Keep the soldering iron in its stand after completing the soldering process to ensure safety and prevent accidental burns or damage. > Handling/stand: Use soldering irons with heat-resistant handles/stand and avoid contact with the hot tip. > Ventilation: Perform soldering in a well-ventilated area. > For safety during soldering, hand gloves are made available > Waste Disposal: Dispose of solder waste and damaged components in designated bins or trays. Fire Safety. > Fire Extinguishers: CO2/ABC fire extinguisher is made available in the Lab and is suitable for electrical fires. > No Flammable Materials: Keep Flammable materials away from workstations. > Emergency Exit: Students are briefed on the location of emergency exits. Emergency Protocols > First Aid Kit: First Aid kit is made available in the laboratory. > Emergency Numbers: Emergency contact numbers are prominently displayed within the lab. > Incident Reporting: Immediately report any accidents, injuries or equipment damage to the lab supervisor. Operational Safety > Supervision: Conduct experiments only under the supervision of faculty or lab assistants. > Safety Signs: Follow all warning signs and instructions provided in the laboratory. > Equipment Use: Operate equipment strictly as per the manufacturer's instructions and guidelines provided by faculty. Cleanliness and Organization > Tidy Workspaces: Keep workbenches clean and free from unnecessary items for safety. > Storage: Store all components and equipment in their designated places after use. Environmental Considerations > E-Waste Disposal: Dispose of electronic waste in compliance with environmental regulations. > Energy Conservation: Turn off equipment and lights when not in use. Periodic Training > Safety Training/workshops: Conduct regular safety training sessions on safety for both students and staff. > Mock Drills: Practice emergency drills to ensure preparedness in case of accidents.

2	SIMULATION LAB	Safety Measures > Electrical earthing is properly maintained. > A first aid box is readily available for emergencies. > A CO_2 or dry-type fire extinguisher is placed in the laboratory. > Electrical caution symbols and safety instructions are clearly displayed. > Emergency power shutdown facilities is available. > Air conditioners are installed to maintain appropriate temperature levels. > Antivirus software is installed on all systems to protect files and data. > All computer systems are connected to a UPS (Uninterruptible Power Supply) for data safety. > CCTV cameras are installed in the computer lab for safety and security monitoring. Rules of Conduct > General rules of laboratory conduct are displayed for reference. > Specific safety rules for students are also prominently displayed. > Students must inspect the computer and its peripherals before use. Any faults or issues must be reported immediately to the instructor. > The use of mobile phones inside the laboratory is strictly prohibited. > Pen drives are not allowed in the lab to avoid virus/firmware. > Students and faculty must sign the login register while entering into the laboratory. > Computers should be properly shut down after use. > Periodic servicing and maintenance of all lab equipment is carried out. >The laboratory must be kept clean and organized at all times. > Assistance will be provided by well-trained technical staff when needed.
3	VLSI DESIGN LAB	Safety Measures > Electrical earthing is properly maintained. > All computer systems are connected to a UPS (Uninterruptible Power Supply). > Air conditioners are installed to maintain appropriate temperature levels. > A first aid box is readily available for emergencies. > Electrical caution symbols and safety instructions are clearly displayed. > Emergency power shutdown facilities are available. > A CO_2 or dry-type fire extinguisher is placed in the laboratory. > CCTV cameras are installed in the lab for monitoring, safety and security. Rules of Conduct > General rules of laboratory conduct are displayed for reference. > Specific safety rules for students are also prominently displayed. > Students must inspect the computer and its peripherals before use. Any faults or issues must be reported immediately to the instructor or incharge. > Students and faculty must sign the login register before entering the laboratory. > Computers should be properly shut down after use. > Only fully functional and safe equipment will be issued. Damaged equipment must not be used. > The use of mobile phones inside the laboratory is strictly prohibited for safety. > Pen drives are not allowed in the lab. > Periodic servicing and maintenance of all lab equipment is carried out. > The laboratory must be kept clean and organized at all times. > Antivirus software is installed on all systems to protect files and data > Assistance will be provided by well-trained technical staff when needed.
4	DIGITAL LOGIC DESIGN LAB / ANALOG AND DIGITAL COMMUNICATIONS LAB	General Laboratory Rules. >Safety Guidelines and Instructions are displayed in the laboratory. > Students are briefed on essential safety precautions and procedures before the commencement of any laboratory session. > Dress Code: Students must wear apron and avoid loose garments or jewelry that could pose safety hazards. >Identification Tags: Students and staff must display their ID cards while in the laboratory. > The use of mobile phones inside the laboratory is strictly prohibited for safety. > Entry Rules: Only authorized students and staff are permitted to enter the laboratory. Electrical Safety. > Electrical networks are well designed in view of safety. > Ensure power supplies are turned off before making or modifying any circuit connections for safety. > Emergency Power shutdown facility is provided. > Electrical caution Symbols are displayed. > Inspect devices, wires, and components for any damage before use. > Earthing: Proper earthing/grounding is provided for all equipment to prevent electric shocks. > Fuse Protection: Ensure all devices are equipped with appropriate fuses or circuit breakers. > Servo stabilizer (5KVA) installed for controlling voltage fluctuations for safety Component Handling. > Thermal Safety: Allow heated components, such as resistors or soldering irons, to cool before touching. > Polarity Checks: Verify the polarity and ratings of capacitors, diodes, and transistors before using them in circuits. > Static Precautions: Use anti-static mats while handling sensitive components like MOSFETs or ICs. Soldering Safety. > Keep the soldering iron in its stand after completing the soldering process to ensure safety and prevent accidental burns or damage. > Handling/stand: Use soldering irons with heat-resistant handles/stand and avoid contact with the hot tip. > Ventilation: Perform soldering in a well-ventilated area. > For safety during soldering, hand gloves are made available > Waste Disposal: Dispose of solder waste and damaged components in designated bins or trays. Fire Safety. > Fire Extinguishers: CO2/ABC fire extinguisher is made available in the Lab and is suitable for electrical fires. > No Flammable Materials: Keep Flammable materials away from workstations. > Emergency Exit: Students are briefed on the location of emergency exits. Emergency Protocols > First Aid Kit: First Aid kit is made available in the laboratory. > Emergency Numbers: Emergency contact numbers are prominently displayed within the lab. > Incident Reporting: Immediately report any accidents, injuries or equipment damage to the lab supervisor. Operational Safety > Supervision: Conduct experiments only under the supervision of faculty or lab assistants. > Safety Signs: Follow all warning signs and instructions provided in the laboratory. > Equipment Use: Operate equipment strictly as per the manufacturer's instructions and guidelines provided by faculty. Cleanliness and Organization > Tidy Workspaces: Keep workbenches clean and free from unnecessary items for safety. > Storage: Store all components and equipment in their designated places after use. Environmental Considerations > E-Waste Disposal: Dispose of electronic waste in compliance with environmental regulations. > Energy Conservation: Turn off equipment and lights when not in use. Periodic Training > Safety Training/workshops: Conduct regular safety training sessions on safety for both students and staff. > Mock Drills: Practice emergency drills to ensure preparedness in case of accidents.
5	MICROWAVE AND OPTICAL COMMUNICATION LAB	General Safety Measures. Instructor Supervision > All experiments must be conducted under the supervision of a faculty or lab technician. > Unauthorized or unsupervised access is strictly prohibited. Lab Entry Rules > Students must wear ID cards and sign the lab attendance register. > Mobile phones must be kept in silent mode and not used inside the lab. Dress Code > Wear appropriate lab coats and avoid loose clothing or metallic accessories that may interfere with microwave/radio equipment. Microwave Equipment Safety. RF Exposure Precaution >Avoid direct exposure to microwave signals. Always keep a safe distance from horn antennas and waveguides during operation. > Never place reflective objects in the path of microwave radiation. > The use of mobile phones inside the laboratory is strictly prohibited for safety. Equipment Handling > Ensure proper impedance matching before switching on microwave components. > Use attenuators and isolators as needed to prevent overloading or back reflections. Power Supply Precaution >Switch off all power supplies before connecting or disconnecting any devices. > Handle Gunn oscillators, klystrons, and circulators with care and proper grounding. Optical Communication Equipment Safety. Laser Safety > Never look directly into a laser source or fiber optic cable, even if you believe it is off. Fiber Optic Safety >Handle fiber optic cables gently to avoid breaks or microbending losses. > Use dust caps on all unused fiber ports to prevent contamination. Connector Safety > Do not touch fiber ends with bare hands while Cleaning fiber connectors before use with isopropyle alcohol. Electrical and Fire Safety. Grounding and Insulation > Ensure all instruments are properly grounded to avoid electric shocks. > Use well-insulated cables and avoid exposed wires. Emergency Readiness > Students Know the location of fire extinguishers and first-aid kits. > Report any accident, spark, or electrical malfunction immediately to lab incharge Operational Best Practices Standard Operating Procedure (SOP) > Follow experiment-specific SOPs as instructed. > Do not change setup connections without faculty approval. Logbook Maintenance > Record all experiment settings and observations properly. > Note any abnormalities in signal strength or equipment behavior. Post-Experiment Protocol > Turn off all equipment and disconnect power after use. > Restore lab benches and components to their original positions. > Servo stabilizer (5KVA) installed for controlling voltage fluctuations.
6	MICROPROCESSORS AND MICROCONTROLLERS LAB	Safety Measures > Electrical earthing is properly maintained. > A first aid box is readily available for emergencies. > Electrical caution symbols and safety instructions are clearly displayed. > Emergency power shutdown facilities are available. > Antivirus software is installed on all systems to protect files and data. > A CO_2 or dry-type fire extinguisher is placed in the laboratory. > All computer systems are connected to a UPS (Uninterruptible Power Supply). > Air conditioners are installed to maintain appropriate temperature levels. > CCTV cameras are installed in all labs for monitoring and security. Rules of Conduct > General rules of laboratory conduct are displayed for reference. > Specific safety rules for students are also prominently displayed. > Students must inspect the computer and its peripherals before use. Any faults or issues must be reported immediately to the instructor. > Students and faculty must sign the login/logout register before leaving the laboratory. > Computers should be properly shut down after use. > The use of mobile phones inside the laboratory is strictly prohibited. > Pen drives are not allowed in the lab. > Periodic servicing and maintenance of all lab equipment is carried out. > The laboratory must be kept clean and organized at all times. > Assistance will be provided by well-trained technical staff when needed.
7	ANALOG AND DIGITAL ELECTRONICS LAB-I	General Laboratory Rules. > Safety Guidelines and Instructions are displayed in the laboratory. > Students are briefed on essential safety precautions and procedures before the commencement of any laboratory session. > Dress Code: Students must wear apron and avoid loose garments or jewelry that could pose safety hazards. > The use of mobile phones inside the laboratory is strictly prohibited for safety. Electrical Safety. > Electrical networks are well designed in view of safety. > Ensure power supplies are turned off before making or modifying any circuit connections for safety. > Emergency Power shutdown facility is provided. > Electrical caution Symbols are displayed. > Earthing: Proper earthing/grounding is provided for all equipment to prevent electric shocks. > Servo stabilizer (5KVA) installed for controlling voltage fluctuations for safety Component Handling. > Polarity Checks: Verify the polarity and ratings of capacitors, diodes, and transistors before using them in circuits. Soldering Safety. > Keep the soldering iron in its stand after completing the soldering process to ensure safety and prevent accidental burns or damage. > Handling/stand: Use soldering irons with heat-resistant handles/stand and avoid contact with the hot tip. > For safety during soldering, hand gloves are made available Emergency & Fire Safety. > Fire Extinguishers: CO2/ABC fire extinguisher is made available in the Lab and is suitable for electrical fires. > Emergency Exit: Students are briefed on the location of emergency exits. > First Aid Kit: First Aid kit is made available in the laboratory. > Emergency Numbers: Emergency contact numbers are prominently displayed within the lab. > Incident Reporting: Immediately report any accidents, injuries or equipment damage to the lab supervisor. Operational Safety > Safety Signs: Follow all warning signs and instructions provided in the laboratory. > Equipment Use: Operate equipment strictly as per the manufacturer's instructions and guidelines provided by faculty. > Energy Conservation: Turn off equipment and lights when not in use for safety. > Safety Training/workshops: Conduct regular safety training sessions on safety for both students and staff. > Mock Drills: Practice emergency drills to ensure preparedness in case of accidents.

8	ANALOG AND DIGITAL ELECTRONICS LAB-II	General Laboratory Rules. > Safety Guidelines and Instructions are displayed in the laboratory. > Students are briefed on essential safety precautions and procedures before the commencement of any laboratory session. > Dress Code: Students must wear apron and avoid loose garments or jewelry that could pose safety hazards. > The use of mobile phones inside the laboratory is strictly prohibited for safety. Electrical Safety. > Electrical networks are well designed in view of safety. > Ensure power supplies are turned off before making or modifying any circuit connections for safety. > Emergency Power shutdown facility is provided. > Electrical caution Symbols are displayed. > Earthing: Proper earthing/grounding is provided for all equipment to prevent electric shocks. > Servo stabilizer (5KVA) installed for controlling voltage fluctuations for safety Component Handling. > Polarity Checks: Verify the polarity and ratings of capacitors, diodes, and transistors before using them in circuits. Soldering Safety. > Keep the soldering iron in its stand after completing the soldering process to ensure safety and prevent accidental burns or damage. > Handling/stand: Use soldering irons with heat-resistant handles/stand and avoid contact with the hot tip. > For safety during soldering, hand gloves are made available Emergency & Fire Safety. > Fire Extinguishers: CO2/ABC fire extinguisher is made available in the Lab and is suitable for electrical fires. > Emergency Exit: Students are briefed on the location of emergency exits. > First Aid Kit: First Aid kit is made available in the laboratory. > Emergency Numbers: Emergency contact numbers are prominently displayed within the lab. > Incident Reporting: Immediately report any accidents, injuries or equipment damage to the lab supervisor. Operational Safety > Safety Signs: Follow all warning signs and instructions provided in the laboratory. > Equipment Use: Operate equipment strictly as per the manufacturer's instructions and guidelines provided by faculty. > Energy Conservation: Turn off equipment and lights when not in use for safety. > Safety Training/workshops: Conduct regular safety training sessions on safety for both students and staff. > Mock Drills: Practice emergency drills to ensure preparedness in case of accidents.
9	BASIC ELECTRICAL ENGINEERING LAB-I	General Laboratory Rules > Safety Guidelines and Instructions are displayed in the laboratory. > Entry Protocol: Only authorized students and staff are permitted to enter the laboratory. > Dress Code: Students must wear appropriate clothing, including insulated footwear, and avoid loose garments or jewelry that could pose safety hazards. > Identification Tags: Students and staff must display their ID cards while in the laboratory. Electrical Safety: > Safety Guidelines and Instructions are displayed in the laboratory. > Emergency Power shutdown facility is provided. > Electrical caution Symbols are displayed. > Hand gloves are made available. > Electrical networks are well designed in view of safety. > Power Supply Awareness: Ensure power supplies are turned off before making or modifying any circuit connections for safety. > Insulated Tools: Use only insulated tools while working with live circuits. > Equipment Check: Inspect devices, wires, and components for any damage before use. > Earthing: Confirm proper grounding of all electrical equipment to prevent electric shocks. > Fuse Protection: Ensure circuits are equipped with appropriate fuses or circuit breakers. > All Systems are supported with UPS facility. Soldering Safety: > Ventilation: Perform soldering in a well-ventilated area. > Handling: Use soldering irons with heat-resistant handles and avoid contact with the hot tip. > Waste Disposal: Dispose of solder waste and damaged components in designated bins. Fire Safety > Availability of CO2/ABC fire extinguisher in the Lab. > Fire Extinguishers: Fire extinguishers are accessible and suitable for electrical fires. > Emergency Exit: Familiarize yourself with the location of emergency exits. Emergency Protocols > First Aid kit is available in the lab. > Emergency Numbers: Displayed emergency contact numbers prominently within the lab. > Incident Reporting: Immediately report any accidents, injuries, or equipment damage to the lab supervisor. Operational Safety > Supervision: Conduct experiments only under the supervision of faculty or lab assistants. > Safety Signs: Follow all warning signs and instructions provided in the laboratory. > Equipment Use: Operate equipment strictly as per the manufacturer's instructions and guidelines provided by faculty. Cleanliness and Organization > Tidy Work spaces: Keep workbenches clean and free from unnecessary items. > Cable Management: Avoid cluttered wires to prevent tripping or accidental disconnection. > Storage: Store all components and equipment in their designated places after use. Environmental Considerations > E-Waste Disposal: Dispose of electronic waste in compliance with environmental regulations. > Energy Conservation: Turn off equipment and lights when not in use. Periodic Training > Safety Workshops: Conduct regular safety training sessions for students and staff. > Mock Drills: Practice emergency drills to ensure preparedness in case of accidents.
10	BASIC ELECTRICAL ENGINEERING LAB-II	General Laboratory Rules > Safety Guidelines and Instructions are displayed in the laboratory. > Entry Protocol: Only authorized students and staff are permitted to enter the laboratory. > Dress Code: Students must wear appropriate clothing, including insulated footwear, and avoid loose garments or jewelry that could pose safety hazards. > Identification Tags: Students and staff must display their ID cards while in the laboratory. Electrical Safety: > Safety Guidelines and Instructions are displayed in the laboratory. > Emergency Power shutdown facility is provided. > Electrical caution Symbols are displayed. > Hand gloves are made available. > Electrical networks are well designed in view of safety. > Power Supply Awareness: Ensure power supplies are turned off before making or modifying any circuit connections for safety. > Insulated Tools: Use only insulated tools while working with live circuits. > Equipment Check: Inspect devices, wires, and components for any damage before use. > Earthing: Confirm proper grounding of all electrical equipment to prevent electric shocks. > Fuse Protection: Ensure circuits are equipped with appropriate fuses or circuit breakers. > All Systems are supported with UPS facility. Soldering Safety: > Ventilation: Perform soldering in a well-ventilated area. > Handling: Use soldering irons with heat-resistant handles and avoid contact with the hot tip. > Waste Disposal: Dispose of solder waste and damaged components in designated bins. Fire Safety > Availability of CO2/ABC fire extinguisher in the Lab. > Fire Extinguishers: Fire extinguishers are accessible and suitable for electrical fires. > Emergency Exit: Familiarize yourself with the location of emergency exits. Emergency Protocols > First Aid kit is available in the lab. > Emergency Numbers: Displayed emergency contact numbers prominently within the lab. > Incident Reporting: Immediately report any accidents, injuries, or equipment damage to the lab supervisor. Operational Safety > Supervision: Conduct experiments only under the supervision of faculty or lab assistants. > Safety Signs: Follow all warning signs and instructions provided in the laboratory. > Equipment Use: Operate equipment strictly as per the manufacturer's instructions and guidelines provided by faculty. Cleanliness and Organization > Tidy Work spaces: Keep workbenches clean and free from unnecessary items. > Cable Management: Avoid cluttered wires to prevent tripping or accidental disconnection. > Storage: Store all components and equipment in their designated places after use. Environmental Considerations > E-Waste Disposal: Dispose of electronic waste in compliance with environmental regulations. > Energy Conservation: Turn off equipment and lights when not in use. Periodic Training > Safety Workshops: Conduct regular safety training sessions for students and staff. > Mock Drills: Practice emergency drills to ensure preparedness in case of accidents.
11	BASIC ELECTRICAL ENGINEERING LAB-III	General Laboratory Rules > Safety Guidelines and Instructions are displayed in the laboratory. > Entry Protocol: Only authorized students and staff are permitted to enter the laboratory. > Dress Code: Students must wear appropriate clothing, including insulated footwear, and avoid loose garments or jewelry that could pose safety hazards. > Identification Tags: Students and staff must display their ID cards while in the laboratory. Electrical Safety: > Safety Guidelines and Instructions are displayed in the laboratory. > Emergency Power shutdown facility is provided. > Electrical caution Symbols are displayed. > Hand gloves are made available. > Electrical networks are well designed in view of safety. > Power Supply Awareness: Ensure power supplies are turned off before making or modifying any circuit connections for safety. > Insulated Tools: Use only insulated tools while working with live circuits. > Equipment Check: Inspect devices, wires, and components for any damage before use. > Earthing: Confirm proper grounding of all electrical equipment to prevent electric shocks. > Fuse Protection: Ensure circuits are equipped with appropriate fuses or circuit breakers. > All Systems are supported with UPS facility. Soldering Safety: > Ventilation: Perform soldering in a well-ventilated area. > Handling: Use soldering irons with heat-resistant handles and avoid contact with the hot tip. > Waste Disposal: Dispose of solder waste and damaged components in designated bins. Fire Safety > Availability of CO2/ABC fire extinguisher in the Lab. > Fire Extinguishers: Fire extinguishers are accessible and suitable for electrical fires. > Emergency Exit: Familiarize yourself with the location of emergency exits. Emergency Protocols > First Aid kit is available in the lab. > Emergency Numbers: Displayed emergency contact numbers prominently within the lab. > Incident Reporting: Immediately report any accidents, injuries, or equipment damage to the lab supervisor. Operational Safety > Supervision: Conduct experiments only under the supervision of faculty or lab assistants. > Safety Signs: Follow all warning signs and instructions provided in the laboratory. > Equipment Use: Operate equipment strictly as per the manufacturer's instructions and guidelines provided by faculty. Cleanliness and Organization > Tidy Work spaces: Keep workbenches clean and free from unnecessary items. > Cable Management: Avoid cluttered wires to prevent tripping or accidental disconnection. > Storage: Store all components and equipment in their designated places after use. Environmental Considerations > E-Waste Disposal: Dispose of electronic waste in compliance with environmental regulations. > Energy Conservation: Turn off equipment and lights when not in use. Periodic Training > Safety Workshops: Conduct regular safety training sessions for students and staff. > Mock Drills: Practice emergency drills to ensure preparedness in case of accidents.
12	PROJECTS LAB(HARDWARE AND SOFTWARE)/ RESEARCH & DEVELOPMENT LAB	> Safety Guidelines and Instructions are displayed in the laboratory. > Before starting of the projects the students are instructed with necessary safety and precautionary measures that has to be adopted in the laboratory. > Electrical and Computer networks are well designed in view of safety. > Availability of First aid kit and CO2 or a dry type fire extinguisher in reach of lab. > Equipment is periodically maintained and serviced to prevent unexpected malfunctions. > Use of damaged or faulty devices is strictly prohibited; only certified working components are allowed. > A properly maintained electrical earthing system is in place to ensure electrical safety. > Emergency power-off switches are installed and accessible for quick shutdown in case of hazards. > Fire safety equipment, such as CO_2 or dry-type extinguishers, is readily available in the lab. > CCTV-Surveillance is enabled to ensure lab security and monitor activities. > A first aid kit is easily accessible for any minor injuries or health emergencies. > Safety and conduct instructions are prominently displayed and must be followed at all times. > Students and researchers must report any hardware/software issues immediately to the lab in-charge. > Before starting work, verify the condition of all devices and peripherals. > Proper shutdown of systems and equipment is mandatory before leaving the lab. > Technical staff are available for assistance and supervision during lab activities.

D3. Project Laboratory/Research Laboratory

7.5. Project Laboratory / Research Laboratory / Centre of Excellence

The department of Electronics & Communication Engineering have an exclusive Project Laboratory, Research Laboratory, and Centre of Excellence. These facilities foster a hands-on learning environment where students and apply engineering principles to design, implement, and analyze real-time projects, which in turn are integral in achieving the Program Outcomes (POs) and Program Specific Outcomes (PSOs).

The Project Laboratory supports the development of innovative hardware and software-based solutions, enhancing skills in embedded systems, IoT, and signal processing—directly contributing to PSOs like solving complex ECE problems and developing industry-ready solutions.

The Research Laboratory promotes advanced studies and publications in areas such as VLSI, communication systems, and artificial intelligence, aligning with lifelong learning and research-oriented outcomes.

The Centre of Excellence, in collaboration with industry partners, conducts workshops, internships, and certification programs, improving practical exposure, professional competence, and entrepreneurship. These initiatives collectively ensure that students graduate with strong theoretical foundations, research aptitude, and the technical skills necessary to excel in academia, industry, or as innovators.

Table:7.5.1 Availability of Project Laboratory / Research Laboratory / Centre of Excellence

S.NO.	Name of the Laboratory
1	Project Laboratory
2	Research Laboratory.
3	Centre of Excellence

1.Project Laboratory Laboratory.

The Department of Electronics and Communication Engineering (ECE) hosts well-established Project Laboratories to foster innovation, skill development and facilitates hands-on learning, innovation, and the development of engineering solutions. It primarily supports **final-year projects, mini-projects, and prototype development** for undergraduate and postgraduate students. The lab is well-equipped with a wide range of resources including development kits such as **Arduino, Raspberry Pi, and FPGA boards**, as well as **simulation tools like MATLAB and Xilinx Vivado.** In addition, the laboratory provides access to essential **testing instruments** such as **Cathode Ray Oscilloscopes (CROs), Function Generators, and Digital Multimeters**, ensuring students can validate and test their circuit designs efficiently. Basic fabrication tools are also available to support small-scale hardware prototyping, fostering creativity and practical implementation of theoretical knowledge.

Project Laboratory:

Department: Department of Electronics and Communication Engineering.

Institution: CMR Engineering College.

1. Course(s) Served by the Lab:

· Project Work – Phase I (IV Year)

· Project Work – Phase II (IV Year)

· Mini Projects (III Year)

2. Facilities Available in the Laboratory:

Table No.7.5.2: Facilities Available in the Laboratory

Sr. No	Equipment/Facility Name	Description/Purpose
1	Computers	Used for programming, circuit simulation, PCB design, documentation, and presentations.
2	Oscilloscopes	To observe and analyze electrical signals, waveforms, and timing characteristics.
3	Power Supplies	Provide 0-30V Regulated DC power for circuit testing and development.
4	Function Generator	Generates various types of electrical waveforms for testing electronic circuits.
5	Multi-meter and Ammeter	Used to measure voltage, current, resistance, and continuity in electronic components.
6	Soldering Station	Enables safe and precise soldering of electronic components onto PCBs.
7	Soldering Accessories	Include flux, soldering wire, and stands for supporting efficient soldering work.
8	Rotary Tool and Accessories	Used for PCB drilling, cutting, shaping, or minor mechanical modifications.
9	3D Printer	Helps in rapid prototyping and fabrication of custom project enclosures and models.

3. Lab Utilization Plan:

Table No.7.5.3: Lab Utilization Plan

Year	Project Type	Description
IV-Year	Major Projects Phase-I	Problem identification, literature review, planning, and initial development.
IV-Year	Major Projects Phase-II	Implementation, testing, documentation, and final project presentation.
III-Year	Mini Projects	Design and development of small-scale systems to apply theoretical concepts.

4. No of Students Projects Undertaken:

Table No.7.5.4: No of Students Projects Undertaken

Year	No. of Projects	Domains Covered
2022–2023	70	Embedded Systems, IoT, VLSI Design, Communication Systems, Robotics
2023–2024	67	Wireless Communication, Signal Processing, IoT, Embedded Systems
2024–2025	70	VLSI, Embedded Systems, AI in ECE, Smart Healthcare Systems

5. Laboratory Outcomes:

LO1: Identify real-time engineering problems and formulate project objectives using knowledge from ECE domains.

LO2: Design and develop hardware/software solutions integrating VLSI, Embedded Systems, Communication, or IoT.

LO3: Demonstrate effective use of tools such as simulation software, PCB design tools, and lab instruments.

LO4: Work effectively in a team and manage time and resources to meet project milestones.

LO5: Present project work through reports and presentations with professional and ethical standards.

6. **Mapping of Lab Outcomes to POs and PSOs:**

By the end of the course, students will be able to:

Table No.7.5.5: Facilities Available in the Laboratory

LO No.	Description	BTL	BTL Level
LO1	Identify real-time engineering problems and formulate project objectives using knowledge from ECE domains.	3	Applying
LO2	Design and develop hardware/software solutions integrating VLSI, Embedded Systems, Communication, or IoT.	6	Creating
LO3	Demonstrate effective use of tools such as simulation software, PCB design tools, and lab instruments.	4	Analyzing
LO4	Work effectively in a team and manage time and resources to meet project milestones.	3	Applying
LO5	Present project work through reports and presentations with professional and ethical standards.	5	Evaluating

2. Availability of Research Laboratory

Research Laboratory

The **Research Laboratory** is a central hub for conducting advanced research and development in cutting-edge areas of Electronics and Communication Engineering. It is designed to support **faculty R&D activities, postgraduate thesis work, and interdisciplinary projects**. The lab focuses on specialized domains such as **VLSI Design, Embedded Systems, Internet of Things (IoT), Wireless Communication, and Signal Processing**. Equipped with **high-performance computing systems**, **FPGA and SoC platforms**, and **domain-specific toolsets** like **Cadence**, **ModelSim**, and **MATLAB Simulink**, the lab creates an enabling environment for innovation. It also promotes **collaborative research** and offers a platform for **consultancy projects**, **paper publications**, and **patent filing**, thus contributing to the academic and industrial growth of the department.

Research Laboratory:

Department: Department of Electronics and Communication Engineering

Institution: CMR Engineering College

1. Course(s) Served by the Lab:

- Project Work (UG – III & IV Years)
- Independent Research/Internship-based Learning Modules.

2. Laboratory Description:

The Research Laboratory is designed to nurture a research-driven culture among undergraduate and postgraduate students. It provides a dedicated environment for exploring advanced topics in computing, conducting experiments, publishing papers, and developing prototypes. The lab is instrumental in supporting the institutions vision of fostering innovation, entrepreneurship, and high-quality research.

3. Utilization of Laboratory:

- Students work on funded research projects.
- Faculty and students publish papers in Scopus/SCI-indexed journals.
- Prototypes and PoCs are developed for hackathons and competitions.
- Final year projects are executed with industry mentors.
- Research scholars use the facility for advanced simulations and experiments.

4. Laboratory Outcomes:

By the end of their engagement in the Research Lab, students will be able to:

LO1: Identify and define research problems through extensive literature review in the domain of ECE.

LO2: Formulate hypotheses or objectives and plan experiments using suitable research methodologies.

LO3: Conduct simulations or experiments and collect, analyze, and interpret data effectively.

LO4: Use modern tools, simulation software, and lab instruments to validate research outcomes.

LO5: Present research findings in technical reports, research papers, or seminars adhering to ethical practices.

Research Laboratory Laboratory Outcomes with BTL levels

Table: 7.5.6. Laboratory Outcomes – Research Laboratory with BTL levels

LO No.	Description	BTL	BTL Level
LO1	Identify and define research problems through extensive literature review in the domain of ECE.	2	Understanding
LO2	Formulate hypotheses or objectives and plan experiments using suitable research methodologies.	3	Applying
LO3	Conduct simulations or experiments and collect, analyze, and interpret data effectively.	4	Analyzing
LO4	Use modern tools, simulation software, and lab instruments to validate research outcomes.	5	Evaluating
LO5	Present research findings in technical reports, research papers, or seminars adhering to ethical practices.	6	Creating

5. Mapping of Lab Outcomes to POs and PSOs:

Table: 7.5.7 Centers of Excellence (CoEs) – Student Utilization Activities

Sr. No	Name of CoE	Student Utilization Activities
1	Center of Excellence in VLSI Design	ASIC/FPGA-based project development, hands-on sessions with Synopsys, RTL simulations.
2	Embedded Systems and IoT Innovation Lab	Real-time application development using Arduino, Raspberry Pi, ESP32; participation in IoT hackathons.

3	Center for Robotics and Automation	Line follower, gesture-based robots, Arduino-controlled automation systems.
4	PCB Design and Prototyping Lab	Designing and fabricating multi-layer PCBs, soldering, and circuit testing.
5	Center of Excellence in Drone Technology	Design and development of drone prototypes, integration of sensors, GPS modules, and wireless communication modules; projects on aerial surveillance, precision agriculture, and disaster monitoring using drones.

6. Faculty Involvement:

· Faculty mentors guide students in identifying research problems, proposal writing, and paper publishing.

· Interdisciplinary research encouraged with collaboration across all departments.

7. Student Involvement and Innovation:

Extended Lab Access: Open access is provided beyond regular lab hours for students registered in research or final-year projects, fostering independent exploration and innovation.

Active Student Research Groups: Students actively participate in department-driven technical communities such as the IoT Innovation Lab, AI & Machine Learning Club, VLSI Design Group, and the IEEE Student Chapter.

Skill & Innovation Platforms: The department regularly organizes hackathons, circuit design challenges, innovation contests, and technical paper presentation training sessions to encourage creative thinking, problem-solving, and research-oriented learning.

Prototype and PoC Development: Students are encouraged to develop Prototypes and Proof of Concepts (PoCs) for inter-collegiate competitions, industry challenges, and innovation fairs.

3. **Availability of Centre of Excellence**

The department has established the following Centre of Excellence (CoE) in the areas of;

Centre of Excellence in VLSI and Embedded Systems

Centre of Excellence in IoT Applications and Development

Features:

Access to industry-standard tools and platforms.

Skill enhancement through certification programs, workshops, and expert talks.

Collaborative research projects with industry and academia.

Utilization of Project Laboratory / Research Laboratory / Centre of Excellence and Relevance to PO's and PSO's

Utilization:

Final-year Major and Mini projects are designed and implemented utilizing the laboratories and CoEs.

Research scholars and faculty members actively use facilities for publishing papers, filing patents, and participating in conferences.

Workshops, hackathons, and Faculty Development Programs(FDPs) are conducted using CoE resources.

Collaboration with industries for consultancy projects and internships is facilitated through CoEs.

Relevance to PO's and PSO's

Table:7.5.8. Contribution to Program Outcomes (POs)

POs	Program Outcome	Relevance through Laboratory/CoE Activities
PO1	Engineering Knowledge	Students apply core concepts in electronics, computing, and mathematics during project design and research experiments.
PO2	Problem Analysis	Complex engineering problems are identified, formulated, and solved through hands-on project and research work.
PO3	Design/Development of Solutions	Creative solutions and prototype systems are designed to meet societal, industrial, and environmental needs.
PO4	Conduct Investigations	Research-based activities involve experimentation, modeling, and data interpretation to reach valid conclusions.
PO5	Engineering Tool Usage	Modern tools such as CAD software, MATLAB, IoT platforms, and VLSI simulation tools are extensively used.
PO6	Engineer and the World	Projects are designed with consideration for sustainable development, safety, and societal impact.
PO7	Ethics	Research and project development promote ethical practices, integrity, and adherence to professional standards.
PO8	Individual and Team Work	Students function effectively as individuals and as leaders/members of multidisciplinary project teams.
PO9	Communication	Effective reporting, documentation, and technical presentations are integral parts of project/research work.
PO10	Project Management and Finance	Students plan, manage resources, and budget their projects, simulating real-world engineering practice.
PO11	Life-Long Learning	Students develop independent learning skills by working on emerging technologies and advanced research areas.

Table: 7.5.9. Contribution to Program Specific Outcomes (PSOs)

PSO Code	Program Specific Outcome	Relevance through Laboratory/CoE Activities
PSO1	Application of Electronics and Communication Engineering Concepts	Projects and research focus on VLSI, Embedded Systems, IoT, Signal Processing, and allied technologies.
PSO2	Design, Analysis, and Simulation	Students design, simulate, and analyze electronic circuits, communication systems, and embedded solutions using appropriate hardware and software tools.

The Project Laboratory, Research Laboratory, and Centre of Excellence play a vital role in bridging theoretical knowledge with practical applications, enhancing students technical skills, research capabilities, and industry readiness, thereby strongly contributing to the achievement of POs and PSOs.

When working with electronics circuits, you may need hand tools, measuring instruments, power supplies, and soldering stations to set up, test, or operate the actual circuit. It is important that your electronics lab design includes critical electronics equipment. Depending on the budget, you can add more items to your electronic laboratory equipment list, but there are a few standard items that are essential for any electronics lab. In this article, we will break down the six most important items to include on your electronics laboratory equipment list

Essential Tools & Equipment in the Project Laboratory / Research Laboratory / Centre of Excellence Lab:

EQUIPMENTS:

- Computers
- Oscilloscopes
- Power supplies
- Function generator
- Multi-meter, Ammeter
- Soldering Station.
- Soldering Accessories.
- Rotary Tool and Accessories.

- 3D Printer.

HARDWARE:

- Arduino Uno Boards
- Raspberriy Pi Boards.
- FPGA Spartan-3 kits
- Nexys4 DDR
- Zed boards
- DSP Kits.
- Printer.

SOFTWARES:

- Synopsys Tools.
- MATLAB 9.0 with Image Processing Tool Box, Simulink
- Cadence FE&BE University bundle Software.
- Xilinx Vivado System Edition software.
- Communications System Toolbox.
- DSP System Toolbox.
- Signal Processing Toolbox.
- Keil software.
- Multisim software.

PART E: First Year faculty and financial Resources

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

E1. First Year Student-Faculty Ratio (FYSFR)

Table No. E1.1: FYSFR details.

Year	Sanctioned intake of all UG programs (S4)	No. of required faculty (RF4= S4/20)	No. of faculty members in Basic Science Courses & Humanities and Social Sciences including Management courses (NS1)	No. of faculty members in Engineering Science Courses (NS2)	Percentage= No. of faculty members ((NS1*0.8) +(NS2*0.2))/(No. of required faculty (RF4)); Percentage= ((NS1*0.8) +(NS2*0.2))/RF
2022-23(CAYm2)	1020	51	52	28	93
2023-24(CAYm1)	1140	57	54	29	86
2024-25(CAY)	1440	72	54	29	68

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

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

Items	Budgeted in 2024-2025	Actual Expenses in 2024-2025 till	Budgeted in 2023-2024	Actual Expenses in 2023-2024 till	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till
Infrastructure Built-Up	25000000	16230925	59000000	58623173	25000000	24197219	35100000	34476641
Library	2000000	1812207	4320000	4311468	3500000	3495781	4857000	4855754
Laboratory equipment	5350000	4766470	13350000	13312948	24900000	24393287	15960000	15623651
Teaching and non-teaching staff salary	334500000	325000000	315000000	311933854	277000000	273490590	242000000	241888901
Outreach Programs	920000	856000	800000	779500	700000	660500	600000	550500
R&D	10000000	9860490	8810000	8747431	8120000	7465121	7350000	6938500
Training, Placement and Industry linkage	10600000	9552500	14100000	14099046	8300000	7426532	9350000	9078184
SDGs	13850000	13345740	13500000	13244698	7000000	6847246	6900000	6512352
Entrepreneurship	250000	196500	200000	185000	200000	177500	180000	157800
Others, specify	208870000	208770000	143180000	140468006	141880000	139007901	151520000	148771940
Total	**611340000**	**590390832**	**572260000**	**565705124**	**496600000**	**487161677**	**473817000**	**468854223**

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

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

Items	Budgeted in 2024-2025	Actual Expenses in 2024-2025 till	Budgeted in 2023-2024	Actual Expenses in 2023-2024 till	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till
Laboratory equipment	500000	484503	925000	919087	1600000	1562955	800000	731107
Software	700000	667120	595000	594750	300000	288750	450000	432986
SDGs	1850000	1806980	1700000	1656471	1100000	1094022	1100000	1048500
Support for faculty development	400000	376800	300000	269520	180000	153150	300000	290104
R & D	2000000	1911750	1200000	1198254	1300000	1295000	1425000	1377500
Industrial Training, Industry expert, Internship	1500000	1456200	1250000	1249942	800000	750000	1600000	1584540
Miscellaneous Expenses*	0	0	0	0	0	0	0	0
Total	**6950000**	**6703353**	**5970000**	**5888024**	**5280000**	**5143877**	**5675000**	**5464737**