NATIONAL BOARD OF ACCREDITATION

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

Program Name : Electrical and Electronics Engineering	**Discipline**: Engineering & Technology
Level : Under Graduate	**Tier**: 1
Application No: 10440	**Date of Submission**: 22-03-2025

PART A- Profile of the Institute

A1.Name of the Institute: ST. JOSEPH'S COLLEGE OF ENGINEERING	
Year of Establishment : 1994	Location of the Institute: Chennai
A2. Institute Address:JAPPIAAR NAGAR, OLD MAMALLAPURAM ROAD, CHEMMACHERY	
City:Chennai	State:Tamil Nadu
Pin Code:600119	Website:www. stjosephs.ac.in
Email:JPRSTJOSEPHS@STJOSEPHS.AC.IN	Phone No(with STD Code):044-24503237
A3. Name and Address of the Affiliating University (if any):	
Name of the University : ANNA UNIVERSITY OF TECHNOLOGY CHENNAI	City: Chennai
State : Tamil Nadu	Pin Code: 600119
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: **13**
- No. of PG programs: **6**

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	PG	Applied Electronics	2003	2024	Electronics and Communication Engineering
2	Engineering & Technology	UG	Artificial Intelligence and Data Science	2021	--	Artificial Intelligence and Data Science
3	Engineering & Technology	UG	Artificial Intelligence and Machine Learning	2021	--	Artificial Intelligence and Machine Learning
4	Engineering & Technology	PG	Biotechnology	2013	2024	Biotechnology
5	Engineering & Technology	UG	Biotechnology	2002	--	Biotechnology
6	Engineering & Technology	UG	Chemical Engineering	1994	--	Chemical Engineering
7	Engineering & Technology	UG	Civil Engineering	2014	2026	Civil Engineering
8	Engineering & Technology	PG	Computer Science and Engineering	2004	--	Computer Science and Engineering
9	Engineering & Technology	UG	Computer Science and Engineering	1995	--	Computer Science and Engineering
10	Engineering & Technology	UG	Computer Science and Engineering (Cyber Security)	2024	--	Computer Science and Engineering (Cyber Security)
11	Engineering & Technology	UG	Electrical and Electronics Engineering	1996	--	Electrical and Electronics Engineering
12	Engineering & Technology	UG	Electronics & Communication Engineering	1994	--	Electronics and Communication Engineering
13	Engineering & Technology	UG	Electronics & Instrumentation Engineering	1999	2026	Electronics and Instrumentation Engineering
14	Engineering & Technology	UG	Information Technology	1997	--	Information Technology

15	Engineering & Technology	PG	Manufacturing Engineering	2013	2024	Mechanical Engineering
16	Engineering & Technology	UG	Mechanical Engineering	1998	--	Mechanical Engineering
17	Engineering & Technology	UG	Mechatronics Engineering	2024	--	Mechatronics Engineering
18	Engineering & Technology	PG	Power Electronics and Drives	2003	2024	Electrical and Electronics Engineering
19	Management	PG	Masters in Business Administration	1995	--	Management

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

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

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

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

No Record

PART-B: Program information

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

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

SR.NO.	PROGRAM NAME	PROGRAM APPLIED LEVEL	YEAR OF START / YEAR OF CLOSED	SANCTIONED INTAKE	INCREASE/DECREASE INTAKE (if any)	YEAR OF INCREASE/DECREASE	CURRENT INTAKE	YEAR OF AICTE APPROVAL	AICTE/COMPETENT AUTHORITY ARROVAL DETAILS	ACCREDITATION STATUS	FROM	TO	NO. OF TIMES PROGRAM ACCREDITED	PROGRAM DURATION
1	Electrical and Electronics Engineering	UG	1996 / --	60	Yes	2024	120	2024	F.No.southern/1-43661065444/2024/EOA dated 19.05.2024	Granted accreditation for 3 years for the period (specify period)	2022	2025	5	4

Sanctioned Intake for Last Five Years for the Power Electronics and Drives	
Academic Year	**Sanctioned Intake**
2024-25	120
2023-24	180
2022-23	180
2021-22	180
2020-21	180
2019-20	180

List of the Allied Departments/Cluster and Programs:

B2. Detail of Head of the Department for the program under consideration:

A. Name of the HoD :	Dr.Jayarama Pradeep
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	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	124	171	163	186	141	156	150
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	4	8	8	9	5	7
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	1	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.	125	175	171	194	150	161	157

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	1	0	104.17
2023-24 (CAYm1)	180	0	0	95.00
2022-23 (CAYm2)	180	0	0	90.56

Average [(ER1 + ER2 + ER3) / 3] = 96.58≡ 20.00

B5. Success Rate of the Students in the Stipulated Period of the Program

Table No.B5.1: The success rate in the stipulated period of a program.

Item	(2020-21) LYG	(2019-20) LYGm1	(2018-19) LYGm2
A*= (No. of students admitted in the 1st year of that batch and those actually admitted in the 2nd year via lateral entry, plus the number of students admitted through multiple entry (if any) and separate division if applicable, minus the number of students who exited through multiple entry (if any).	189.00	185.00	187.00
B=No. of students who graduated from the program in the stipulated course duration	136.00	161.00	155.00
Success Rate (SR)= (B/A) * 100	71.96	87.03	82.89

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 80.63

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

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

Academic Performance	CAYm1(2023-24)	CAYm2(2022-23)	CAYm3 (2021-22)
X=(Mean of 1st year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 1st year/10)	8.09	8.18	8.09
Y=Total no. of successful students	145.00	144.00	154.00
Z=Total no. of students appeared in the examination	171.00	163.00	186.00
API [X*(Y/Z)]	6.86	7.23	6.70

Average API[(AP1+AP2+AP3)/3] : 6.93

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)	8.16	8.18	8.67
Y=Total no. of successful students	133.00	161.00	136.00
Z=Total no. of students appeared in the examination	152.00	162.00	150.00
API [X * (Y/Z)]	7.14	8.13	7.86

Average API [(AP1 + AP2 + AP3)/3] : 7.71

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

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

Academic Performance	CAYm1 (2023-24)	CAYm2 (2022-23)	CAYm3 (2021-22)
X=(Mean of 3rd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 3rd year/10)	8.19	8.48	8.45
Y=Total no. of successful students	161.00	136.00	161.00
Z=Total no. of students appeared in the examination	161.00	136.00	161.00
API [X*(Y/Z)]:	8.19	8.48	8.45

Average API [(AP1 + AP2 + AP3)/3] : 8.37

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	189.00	185.00	187.00
X=No. of students placed	133.00	145.00	138.00
Y=No. of students admitted to higher studies	7.00	12.00	15.00
Z= No. of students taking up entrepreneurship	4.00	0.00	0.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	76.19	84.86	81.82

Average Placement Index = (P_1 + P_2 + P_3)/3: 80.96 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.Jayarama Pradeep	XXXXXXX67E	Ph.D	Sathyabama University	Power Electronics and Drives	26/05/1998	26.9	Lecturer	Professor	01/06/2017	Regular	Yes		Yes
2	Dr.T.V.Narmadha	XXXXXXX70F	Ph.D	Anna university	Control and Instrumentation	01/06/2000	24.9	Lecturer	Professor	03/01/2012	Regular	Yes		No
3	Dr. M.Ramesh Babu	XXXXXXX89B	Ph.D	Anna university	Power System	04/07/2003	21.8	Lecturer	Professor	01/03/2013	Regular	Yes		No
4	Dr.T.D.Sudhakar	XXXXXXX05Q	Ph.D	Anna university	Power System Engineering	02/06/2004	20.9	Lecturer	Professor	05/04/2014	Regular	Yes		No
5	Dr.V.Chamundeeswari	XXXXXXX97M	Ph.D	Anna university	Power Electronics and Drives	18/06/2007	17.9	Lecturer	Associate Professor	01/06/2012	Regular	Yes		No
6	Dr. N.Chidambararaj	XXXXXXX03Q	Ph.D	Sathyabama University	Power System Engineering	04/07/2007	17.8	Lecturer	Associate Professor	01/06/2010	Regular	Yes		No
7	Dr.T.Babu	XXXXXXX00K	Ph.D	Anna university	CONTROL SYSTEMS	09/06/2010	14.9	Assistant Professor	Associate Professor	01/06/2011	Regular	Yes		No
8	Dr.M.Venmathi	XXXXXXX45P	Ph.D	Anna university	Power System Engineering	01/06/2017	7.9	Associate Professor	Associate Professor	01/06/2017	Regular	Yes		No
9	Dr.V.Krishnakumar	XXXXXXX88K	Ph.D	Anna university	Electrical Drives and Control	01/06/2017	7.9	Associate Professor	Associate Professor	01/06/2017	Regular	Yes		No

10	Dr.P.Velmurugan	XXXXXXX07B	Ph.D	Annamalai University	Power Electronics and Drives	09/06/2017	7.9	Associate Professor	Associate Professor	09/06/2017	Regular	Yes		No
11	Dr.S.Sridharan	XXXXXXX62F	Ph.D	Anna university	Applied Electronics	17/07/2017	7.8	Associate Professor	Associate Professor	17/07/2017	Regular	Yes		No
12	Dr.A.Jamna	XXXXXXX40A	Ph.D	Anna university	Electrical Drives and Control	10/06/2019	5.9	Assistant Professor	Assistant Professor		Regular	Yes		No
13	Dr.M.Anitha	XXXXXXX45R	Ph.D	Anna university	Power Electronics and Drives	01/09/2021	3.6	Assistant Professor	Assistant Professor		Regular	Yes		No
14	Ms.R.G.Nirmala	XXXXXXX93H	M.E/M.Tech	Anna university	Power Electronics and Drives	10/06/2008	16.9	Assistant Professor	Assistant Professor		Regular	Yes		No
15	Mr.R. Elanthirayan	XXXXXXX76L	M.E/M.Tech	SRM University	Power Electronics and Drives	09/06/2010	14.9	Assistant Professor	Assistant Professor		Regular	Yes		No
16	Dr. C.Venkatesh Kumar	XXXXXXX31G	Ph.D	Anna university	Power System Engineering	09/06/2010	14.9	Assistant Professor	Assistant Professor		Regular	Yes		No
17	Mr.S.S.Harish	XXXXXXX11C	M.E/M.Tech	Anna university	Control and Instrumentation	13/07/2010	14.8	Assistant Professor	Assistant Professor		Regular	Yes		No
18	Mr.N.Jeyaprakash	XXXXXXX09P	M.E/M.Tech	Anna University of Technology, Tirunelveli	Embedded System Technologies	17/08/2011	13.7	Assistant Professor	Assistant Professor		Regular	Yes		No
19	Ms.S.P.Vedavalli	XXXXXXX87F	M.E/M.Tech	Anna university	Power Electronics and Drives	17/08/2011	13.7	Assistant Professor	Assistant Professor		Regular	Yes		No
20	Mr.S.Sivakumar	XXXXXXX93N	M.E/M.Tech	Anna university	Instrumentation	17/08/2011	13.7	Assistant Professor	Assistant Professor		Regular	Yes		No
21	Mr. R.Sreekanth	XXXXXXX75G	M.E/M.Tech	Anna university	Power System Engineering	13/06/2012	12.9	Assistant Professor	Assistant Professor		Regular	Yes		No
22	Mr. H Umesh Prabhu	XXXXXXX18E	M.E/M.Tech	Anna university	Applied Electronics	01/07/2013	11.8	Assistant Professor	Assistant Professor		Regular	Yes		No
23	Mr. K.Aravindhan	XXXXXXX64H	M.E/M.Tech	Anna university	Power System Engineering	01/07/2013	11.8	Assistant Professor	Assistant Professor		Regular	Yes		No
24	Mr.T.Srianandа Ganesh	XXXXXXX81A	M.E/M.Tech	Anna university	Solar Energy	01/08/2013	11.7	Assistant Professor	Assistant Professor		Regular	Yes		No
25	Ms.S.Gomathi	XXXXXXX79H	M.E/M.Tech	Anna university	Power Electronics and Drives	01/08/2013	11.7	Assistant Professor	Assistant Professor		Regular	Yes		No
26	Mr. H.Prasad	XXXXXXX63L	M.E/M.Tech	Anna university	Power System Engineering	05/04/2014	10.11	Assistant Professor	Assistant Professor		Regular	Yes		No
27	Mr. S.Nishant	XXXXXXX66B	M.E/M.Tech	Anna university	Power Electronics and Drives	05/06/2014	10.9	Assistant Professor	Assistant Professor		Regular	Yes		No
28	Mr.A.Sadeeshkumar	XXXXXXX74F	M.E/M.Tech	Anna university	Power Electronics and Drives	16/06/2014	10.9	Assistant Professor	Assistant Professor		Regular	Yes		No
29	Ms.C.Ramadevi	XXXXXXX07M	M.E/M.Tech	Anna university	Control and Instrumentation2	23/07/2014	10.7	Assistant Professor	Assistant Professor		Regular	Yes		No
30	Mr.V.Balasubramanian	XXXXXXX76C	M.E/M.Tech	Sathyabama University	Power Electronics and Drives	29/06/2016	8.8	Assistant Professor	Assistant Professor		Regular	Yes		No
31	Dr.P.Anbarasan	XXXXXXX70A	Ph.D	Anna university	Electrical Drives and Control	09/06/2017	7.9	Assistant Professor	Assistant Professor		Regular	No	31/08/2024	No
32	Mr.R.Siddhardhan	XXXXXXX94P	M.E/M.Tech	Anna university	Power Electronics and Drives	09/06/2010	14.2	Assistant Professor	Assistant Professor		Regular	No	31/08/2024	No
33	Ms.Sumitha	XXXXXXX89D	M.E/M.Tech	Anna university	Power Electronics and Drives	29/06/2016	8.8	Assistant Professor	Assistant Professor		Regular	Yes		No

34	Dr.M.Chilambarasan	XXXXXXX63P	Ph.D	Anna university	Power Electronics and Drives	16/06/2010	14.9	Assistant Professor	Assistant Professor		Regular	Yes		No
35	Ms.Sakeenathul Kubra	XXXXXXX29R	M.E/M.Tech	Anna university	Power System Engineering	05/04/2014	10.11	Assistant Professor	Assistant Professor		Regular	Yes		No
36	Ms.B.Greeshma	XXXXXXX58M	M.E/M.Tech	Sathyabama University	Power Electronics and Drives	14/12/2020	3.5	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No
37	Ms.Kirthini Godweena.A	XXXXXXX70A	M.E/M.Tech	Anna University	Control and Instrumentation	29/06/2016	7.11	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No
38	Mrs.Dhivya S	XXXXXXX55G	M.E/M.Tech	Anna University	Instrumentation	29/06/2016	7.11	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No
39	Ms.T.Abimala	XXXXXXX40R	M.E/M.Tech	Anna University	Control and Instrumentation	02/08/2017	6.9	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No

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

C2. Student-Faculty Ratio (SFR)

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

No. of UG Programs in the Department1 No. of PG Programs in the Department1
Table No.C2.1: Student-faculty ratio.

Description	**CAY(2024-25)**	**CAYm1 (2023-24)**	**CAYm2 (2022-23)**
UG1.B	184	188	188
UG1.C	188	188	189
UG1.D	188	189	185
UG1: Electrical and Electronics Engineering	**560**	**565**	**562**
DS=Total no. of students in all UG and PG programs in the Department	560	565	562
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=** 560	**S2=** 565	**S3=** 562
DF=Total no. of faculty members in the Department	33	39	39
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=** 33	**F2=** 39	**F3=** 39
FF=The faculty members in F who have a 100% teaching load in the first-year courses	0	0	0
Student Faculty Ratio (SFR)=S/(F-FF)	**SFR1= 16.97**	**SFR2= 14.49**	**SFR3= 14.41**
Average SFR for 3 years	**SFR= 15.29**		

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)	15	18	27.00	20.56
2023-24(CAYm1)	15	24	28.00	21.96
2022-23(CAYm2)	14	25	28.00	21.43

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	7.00	18.00	22.00
2023-24	3.00	4.00	6.00	7.00	18.00	28.00
2022-23	3.00	4.00	6.00	7.00	18.00	28.00
Average	RF1=3.00	AF1=4.00	RF2=6.00	AF2=7.00	RF2=18.00	AF2=26.00

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	Dr.K.Pushpanathan	Director	TIAS Energy Pvt Ltd, Chennai	EE1602 Renewable Energy Systems (VI Semester)	30.00
2	Mr.S.V.Sreeraj	Director	EmCog Solutions, Chennai	EE1672 Embedded Systems (Lab Integrated) (VI Semester)	30.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr.K.Pushpanathan	Director	TIAS Energy Pvt Ltd, Chennai	EE8703 Renewable Energy Systems (VII Semester)	30.00
2	Mr.S.V.Sreeraj	Director	EmCog Solutions, Chennai	EE8691 Embedded Systems (VI Semester)	30.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Dr.K.Pushpanathan	Director	TIAS Energy Pvt Ltd, Chennai	EE8703 Renewable Energy Systems (VII Semester)	30.00
2	Mr.S.V.Sreeraj	Director	EmCog Solutions, Chennai	EE8691 Embedded Systems (VI Semester)	30.00

C6. Academic Research

Table No. C6.1: Faculty publication details.

S.No.	Item	2023-24 (CAYm1)	2022-23 (CAYm2)	2021-22 (CAYm3)
1	No. of peer reviewed journal papers published	24	11	18
2	No. of peer reviewed conference papers published	26	4	3
3	No. of books/book chapters published	3	3	3

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.Jayarama Pradeep	Achaya V Dhyaneshwar E Harish Gautham K U Siva harish M	Electrical and Electronics Engineering	Risk detection system for oil and gas industries	TNSCST	2023 - 2024	0.10
Dr.M.Ramesh babu	Ahmed Musthafa M A Arunkumar P Bharathrai M Dhashagireevan S	Electrical and Electronics Engineering	Virtual laboratories using Augumented reality	TNSCST	2023 - 2024	0.10
Mr.R.Elanthirayan	Aparnaa G Aruna Devi S Daniel D Lingesh K	Electrical and Electronics Engineering	Low cost light weight electric cycle using biodegradable frame	TNSCST	2023 - 2024	0.10
						Amount received (Rs.):0.30

(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.Jayarama Pradeep	-	Electrical and Electronics Engineering	Analysis of power electronics inverter and drive using discrete event system approach	DST	2022- 2023	6.60
Ms.S.P.Vedavalli	Vaidhiyanathan N, Vigneshwaran K	Electrical and Electronics Engineering	Non Isolated DC - DC power converter with high Gain for EV applications	TNSCST	2022- 2023	0.08
						Amount received (Rs.):6.68

(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.T.D.Sudhakar	B. Sasikkumar Sebastian Sugan Gomez	Electrical and Electronics Engineering	Mitigation of mosquito larvae production in water bodies using photo voltic energy applied to water agitators	TNSCST	2021 - 2022	0.08
Ms.R.G.Nirmala	A S Keerthana Sri	Electrical and Electronics Engineering	Power compensation in hybrid wind- PV grid connected using PVR	TNSCST	2021 - 2022	0.08
						Amount received (Rs.):0.16

Total Amount (Lacs) Received for the Past 3 Years: 7.14

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. Jayarama Pradeep	Mr.Harry Jakin Mr.R. Haresh	Electrical and Electronics Engineering	Technical Content Curation Team	Invenk Solutions	2 Months	0.05
Dr. Jayarama Pradeep	Dr. V.Krishnakumar Dr. P. Anbarasan Mr. R. ElanthiriyanMr. Rakshit Roshan V Mr. Vignesh B	Electrical and Electronics Engineering	Human Machine interface Development for Electric Vehicles	EMCOG Solutions	4 Months	0.70
Dr. Jayarama Pradeep	Mr. A. Sadeesh kumar Mrs. C. Ramadevi Mr. M. Ram Praveen & Mr. P. Saran	Electrical and Electronics Engineering	Collaborative Ideation, Designing and implementing software components	HebeSec Technologies Private Limited	4 Months	0.40
Dr.T.V.Narmadha	Dr.N.Chidamararaj Mr.A.Sadeeshkumar	Electrical and Electronics Engineering	Lecture sessions on consultancy basis	Dream education	5 Months	0.40
Dr.T.V.Narmadha	Dr.N.Chidambararaj Mr.R.Siddhardhan Mr.A.Sadeeshkumar Mrs.C.Ramadevi	Electrical and Electronics Engineering	Inverter design for Solar PV & UPS system	Powertech Solutions	5 Months	0.40
Dr.T.V.Narmadha	Dr.N.Chidambararaj Mr.R.Siddhardan Mr.A.Sadeeshkumar Mrs.C.Ramadevi	Electrical and Electronics Engineering	Development and Integration of the Distillation Process for water purification	Lincoln Global Solutions	6 Months	0.40
Dr.M.Ramesh babu	Dr.C.Venkateskumar Mr.H.Umesh prabhu Mr.R.Sreekanth	Electrical and Electronics Engineering	Implementation CAN bus based BMS for Li ion battery of EV through oT	Ngen Solutions Mars Energy	6 Months	0.50
Dr.M.Ramesh babu	Dr.C.Venkateskumar Mr.H.Umesh prabhu Mr.R.Sreekanth Mr.S.S.Harish	Electrical and Electronics Engineering	Design of DC-DC converter for uninterrupted power supply(UPS)	SPT Powertronics	3 Months	0.20
Dr.M.Ramesh babu	Dr.C.Venkateskumar Mr.H.Umesh prabhu Mr.R.Sreekanth Mr.S.S.Harish	Electrical and Electronics Engineering	Power system studies with solar power integration	DSA imports	6 Months	0.50
Dr.T.D.Sudhakar	Dr.S.Sridharan Mr..Jeaprakash Mr.S.Nishant Mr.H.Prasad	Electrical and Electronics Engineering	Solar energy based uninterrupted power supply for education institution	SPT Powertronics	4 Months	0.49
Dr.S.Sridharan	Dr.T.D.Sudhakar Mr..Jeaprakash Mr.S.Nishant Mr.H.Prasad Mr.V.Balasubramanian	Electrical and Electronics Engineering	Common neutral impact on solar PV systems in apartment buildings	Jesthan Solutions	4 Months	0.49
Dr.S.Sridharan	Mr..Jeyaprakash Mr.S.Nishant	Electrical and Electronics Engineering	Unveil the impact of snail trails on PV modules	TIAS Energy Pvt Ltd	3 Months	0.22
Dr.V.Chamundeeswari	Mrs.R.G.Nirmala Mr.S.Sivakumar	Electrical and Electronics Engineering	Design and implementation of a solar PV inverter	Sri Venkateshwara Traders	5 Months	0.80
Dr.M.Venmathi	Dr.P.Velmurugan Mr.Aravindan	Electrical and Electronics Engineering	Guardian wigs: PIR sensor enabled drone for human detection and automation	Sphear innovations	4 Months	0.40
						Amount received (Rs.):5.95

(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. Jayarama Pradeep	Dr. V.Krishnakumar Dr. P. Anbarasan Mr. T. Balasubramanian Dr. A. Jamna	Electrical and Electronics Engineering	Design of DC-DC Converter for Electric Vehicle charging station Applications	Niyata Infotech, Chennai	1 Year	0.45
Dr.T.V.Narmadha	Mr.R.Elanthirayan Mr.M.Chilambarasan Mr.S.Nishanth Mr.A.Sadeeshkumar	Electrical and Electronics Engineering	Renewable Based uninterrupted power supply for educational institution	Newtech Power Systems Pvt Ltd, Chennai	6 Months	0.50
Dr.T.D.Sudhakar	Dr.N.Chidambararaj Mr.K.Aravindhan Mr.H.Prasad	Electrical and Electronics Engineering	Reactive Power Management for High tension consumers using solar photovoltaic based converter topology	Moon Power Private marketing Limited, Chennai	6 Months	0.50
Dr.V. Chamundeeswari	Mr.N.Jeyaprakash Mr.H.Umesh Prabhu Mr.V.Balasubramanian	Electrical and Electronics Engineering	Adaptive Gripper for Robotics	Axis Global Automation Pvt.Ltd, Chennai	5 Months	0.85
Dr.M.Venmathi	Ms.R.G.Nirmala Mr.S.Sivakumar Mr.K.Aravindhan	Electrical and Electronics Engineering	Artificial Neural Network Based Solar Panel Monitoring System and Shading Exploration	Tias Energy, Chennai	3 Months	0.40
Dr.T.V.Narmadha	Mr.R.Elanthirayan Mr.A.Sadeeshkumar Mr.S.Nishant	Electrical and Electronics Engineering	Optimised UPS system using Hybrid - RES	Powertech Solutions Chennai	5 Months	0.65
Dr.S.Sridharan	Dr.P.Velmurugan Mr.R.Elanthirayan Mr.S.Sivakumar	Electrical and Electronics Engineering	Development of Sensor less BLDC Controller for 3kW Traction Motor	EmCog Solutions, Chennai	4 Months	0.70
						Amount received (Rs.):4.05

(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.M.Ramesh Babu	Mr.C.Venkatesh kumar Mr.S.S.Harish Mr.R.Sreekanth	Electrical and Electronics Engineering	A Customized CAN bus interfaced battery management system for Li-Ion battery for electric Vehicle	NGEN Solutions Chennai	6 Months	0.50
Dr.Jayarama Pradeep	Dr.M.Venmathi Dr.V.Krishnakumar Dr.P.Anbarasan	Electrical and Electronics Engineering	Reactive Power Management Strategy for Renewable Energy Plants	Power Projects Chennai	4 Months	0.50
Dr.S.Sridharan	Dr.P.Velmurugan Mr.R.Elanthirayan Mr.S.Sivakumar	Electrical and Electronics Engineering	Power flow analysis of 3 phase electrical circuits for effective utilisation of solar power at Net feeding tariff	Tias Energy, Chennai	4 Months	0.49
Dr. P. Velmurugan	Dr. Krishna Kumar. V, Mr. S. Nishant	Electrical and Electronics Engineering	Design of Converters for EV Charging Facility with Renewable energy source.	Emcog Solutions	5 Months	0.54
						Amount received (Rs.):2.03

Total amount (Lacs) received for the past 3 years: 12.03

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. Jayarama Pradeep & Mr. R. Elanthiraiyan	Design and Fabrication of Light weight composite E – Bike for dual mobility	4 Months	1.25	1.25	Participated many all India Challenge Competitions
Dr. Jayarama Pradeep & Mr. R. Elanthiraiyan	Solar Power Enabled Laboratory	3 months	0.61	0.61	Solar Power was harnessed and used as a single phase source for loads in renewable energy lab
Dr. Jayarama Pradeep & Dr. P. Velmurugan	Electric Vehicle Design	6 Months	6.87	6.87	utilized in Electric vehicle lab for demonstration purpose
			Amount received (Rs.): 8.73		

(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. Jayarama Pradeep & Mr. R. Elanthiraiyan	Hybrid Power Generator using Solar and Wind Energy	3 Months	0.58	0.58	Operated in college and utilize the power in block V
Dr. Jayarama Pradeep & Mr. R. Elanthiraiyan	Led tube light and bulbs	3 Months	0.50	0.50	Supply to our college
Dr. Jayarama Pradeep & Mr. R. Elanthiraiyan	Low Cost Light Weight Electric Cycle using Bio-Degradable Frame and Magnesium Alloy Wheel.	5 Months	0.37	0.37	Developed a working model and participated in Naan Mudhalvan Niral Thiruvizha conducted by Govt of TN
			Amount received (Rs.): 1.45		

(CAYm3)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Mr. R. Elanthirayan	Solar Tree	2 Months	0.32	0.32	Displayed our college name and time in front of Library
			Amount received (Rs.): 0.32		

Total amount (Lacs) received for the past 3 years : 10.50

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	Engineering practices laboratory	3	□ Regulated Power Supply (RPS) □ Cathode ray oscilloscope □ Digital storage oscilloscope □	42 hours	Mrs.C.R. Jayanthi Mr.G.Nand	Lab Instructor Lab Assistant L	DEEE DEEE DEEE
2	Electronic Devices Laboratory	3	□ Regulated Power Supply (RPS) □ Cathode ray oscilloscope □ Digital storage oscilloscope □	9hours	Mrs.C.R. Jayanthi Mr.G.Nand	Lab Instructor Lab Assistant L	DEEE DEEE DEEE
3	Electric Circuits Laboratory	3	□ I3 & I5 Computers □ Regulated Power Supply □ Cathode ray oscilloscope □ Digital storage oscilloscope □	9 hours	Mr.R. Daniel Alexander Mr.G.	Lab Assistant Lab Assistant	DEEE DEEE

4	DC Machines Laboratory	3	□ 3 phase power supply and its panel □ DC supply and its rectifier panel □ DC Shunt, Series and Compound motors □ DC Compound Generator □ Rheostat and AC - DC	9 hours	Mrs.C.R. Jayanthi Mr.G.Nand	Lab Instructor Lab Assistant T	DEEE DEEE ITI
5	AC Machines Laboratory	3	□ 3 phase power supply and its panel □ DC supply and its rectifier panel □ AC Machines(Alternator,Induction motor, Synchronous motor) □ Transformers(1 pahse, 3 phase) □	9 hours	Mrs.C.R. Jayanthi Mr.G.Nand	Lab Instructor Lab Assistant T	DEEE DEEE ITI
6	Control and Instrumentation Laboratory	3	□ Regulated Power Supply □ AC and D.C Position Trainer Kit □ Strain Gauge Trainer Kit □ Lead Lag Network Simulator □ Temperature and Flow transducer □	9 hours	Mr.T.P. Paulraj Mr.G. Chandra	Lab Instructor Lab Assistant	DEEE DEEE
7	Power Electronics and Drives Laboratory	3	□ Three phase Voltage Regulator □ Single Phase Cyclo Converter □ Speed Control Kit for Three Phase Induction Motor □ Variable PWM Inverter FED Drive for Induction Motor	9 hours	Mr.T.P. Paulraj Mr.G. Chandra	Lab Instructor Lab Assistant	DEEE DEEE
8	Embedded Systems (Integrated Laboratory)	3	□ i5 Computers □ PIC Microcontroller trainer kit □ STM32 ARM Cortex Microcontroller trainer kit □ ESP 8266 Wi-Fi Microcontroller trainer kit	9 hours	Mr.R. Daniel Alexander	Lab Assistant	DEEE
9	Renewable Energy Systems Laboratory	3	□ i5 Computers & i7 Computers □ Solar PV training system 1kW □ Wind – Solar hybrid power system □ Fuel cell energy training system □ Solar PV Emulator	9 hours	Mr.T.P. Paulraj Mr.G. Chandra	Lab Instructor Lab Assistant	DEEE DEEE
10	Electric Vehicle Mechanics and Control (Integrated Laboratory)	3	□ i5 Computers & i7 Computers □ Battery Cell Analyzer □ Lithium iron phosphate Battery 8S 2P cylindrical or 8S Prismatic with Smart Battery management system □ LED	9 hours	Mr.R. Daniel Alexander	Lab Assistant	DEEE
11	Power System Simulation Laboratory	3	□ i5 Computers & i7 Computers □ Softwares - MATLAB 2024, EMTP	9 hours	Mr.R. Daniel Alexander	Lab Assistant	DEEE
12	Analog and Digital Electronics	3	□ Dual (0-30V) variability Power Supply □ CRO □ Function Generator □ Digital Multimeter □ IC Tester (Analog) □ Bread board □ Digital Trainer Kit	9 hours	Mr.R. Daniel Alexander	Lab Assistant	DEEE
13	Microprocessors and Microcontrollers	3	□ 8085 Microprocessor Trainer with Power Supply □ 8051 Micro Controller Trainer Kit with power Supply □ 8251,8255,8259 Interface boards □ 8279 Keyboard /	9 hours	Mr.R. Daniel Alexander Mr.G.	Lab Assistant Lab Assistant	DEEE DEEE

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	Engineering practices laboratory	•Facilitated with Fire extinguisher and the First aid box •Always use an appropriate stand for keeping soldering iron. •Turn off your soldering iron if it is not in use for more than 10 minutes. •Never leave a hot soldering iron unattended. •Never touch a soldering iron element or bit unless the iron has been disconnected from the mains and has had adequate time to cool down • Never strip insulation from a wire with your te • eth or a knife, always use an appropriate wire stripping tool. • Power supply should be given to appropriate pin numbers of IC
2	Electronics Devices laboratory	•Facilitated with Fire extinguisher and the First aid box •Always use an appropriate stand for keeping soldering iron. •Turn off your soldering iron if it is not in use for more than 10 minutes. •Never leave a hot soldering iron unattended. •Never touch a soldering iron element or bit unless the iron has been disconnected from the mains and has had adequate time to cool down •Never strip insulation from a wire with your teeth or a knife, always use an appropriate wire stripping tool. •Power supply should be given to appropriate pin numbers of IC
3	Electric Circuits laboratory	•Facilitated with Fire extinguisher and the First aid box •Never strip insulation from a wire with your teeth or a knife, always use an appropriate wire stripping tool. •Always make sure all capacitors are discharged (using a grounded cable with an insulating handle) before touching high voltage leads or the "inside" of any equipment even after it has been turned off. Capacitors can hold charge for many hours after the equipment has been turned off.
4	DC Machines laboratory	•Facilitated with Fire extinguisher and the First aid box •Never strip insulation from a wire with your teeth or a knife, always use an appropriate wire stripping tool.
5	AC Machines laboratory	•Facilitated with Fire extinguisher and the First aid box •Never strip insulation from a wire with your teeth or a knife, always use an appropriate wire stripping tool.

6	Control and Instrumentation	•Facilitated with Fire extinguisher and the First aid box •The table should be clean and non- metallic to avoid short circuits. •Maintain unobstructed access to all electrical panels for proper functioning of trainer Kits. •Never strip insulation from a wire with your teeth or a knife, always use an appropriate wire stripping tool. •Do not touch any exposed wires or sockets.
7	Power Electronics and Drives Laboratory	•Facilitated with Fire extinguisher and the First aid box •Maintain unobstructed access to all electrical panels for proper functioning of trainer kits
8	Embedded Systems (Integrated Lab)	•Facilitated with Fire extinguisher and the First aid box •Turning OFF the computer when not in use •Plugging external devices without scanning them for computer viruses are avoided •Ensuring the temperature in the lab stays cool, since there are a lot of machines in a lab as these can over heat easily. •Touching the power sockets when a computer is ON is avoided •Periodic backup of all important data files are maintained
9	Renewable Energy Systems	•Facilitated with Fire extinguisher and the First aid box •Report any broken equipment or defective parts to the lab instructor. Do not open, remove the cover, or attempt to repair any equipment. •When working with the experimental development boards, please do not touch the solid-state parts on the board but handle the board from its edge.
10	Electric Vehicle Mechanics and Control (Integrated Lab)	•Emergency equipment (e.g. fire extinguishers, emergency eyewash/shower units, etc.) Should be unobstructed, clearly visible, and in good working condition •First aid kits are available in quickly accessible, visible and designated places. Ensure that first-aid kits have not expired. •Floors are maintained free from tripping, slipping, and falling hazards (e.g. cords, cables, wires, equipment, and tools). •Only proper equipment, in good condition, should be used.
11	Power System Simulation	•Facilitated with Fire extinguisher and the First aid box •Turning OFF the computer when not in use •Plugging external devices without scanning them for computer viruses are avoided •Ensuring the temperature in the lab stays cool, since there are a lot of machines in a lab as these can over heat easily. •Touching the power sockets when a computer is ON is avoided •Periodic backup of all important data files are maintained
12	Analog and Digital Electronics	•Facility equipped with a fire extinguisher and a first aid kit. •Use digital trainer kits carefully, ensuring all wiring is done before power is applied. •Discharge capacitors using a grounded probe before handling. •Confirm capacitor discharge even after power-off to avoid electric shock. •Ensure DSO and power supplies are properly grounded.
13	Microprocessors and Microcontrollers	•Fire extinguisher and first aid kit are installed. •Use 8085/8086 kits with ESD precautions; handle boards by edges. •Maintain unobstructed access to electrical control panels. •Check jumpers, address lines, and control signal connections before powering. • Maintain antivirus protection and backup critical project files.

D3. Project Laboratory/Research Laboratory

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

The core mission of a Research Laboratory is to generate new insights through rigorous investigation and experimentation. It supports the organization or institution's strategic goals by driving innovation, enhancing technical capabilities, and fostering a culture of inquiry and evidence-based development. The CoE serves as a hub for developing capabilities, consolidating knowledge, and aligning strategies to students. It helps organizations capitalize on expertise to solve complex challenges, improve performance, and build sustainable competitive advantages.

Key Objectives

- **Knowledge Generation**: Conduct original research to advance scientific and technical frontiers.
- **Innovation & Development**: Translate research findings into practical solutions, prototypes, or products.
- **Collaboration & Partnerships**: Work with academic institutions, industry partners, and governmental bodies to leverage expertise and resources.
- **Talent Development**: Train and mentor researchers, scientists, and students to build future capabilities.
- **Publication & Dissemination**: Share findings through publications, patents, and conferences to contribute to global knowledge.
- **Standardization & Best Practices**: Establish uniform methodologies, tools, and frameworks to promote consistency and quality.
- **Capability Building**: Develop skills, provide training, and mentor teams to enhance overall competency.
- **Innovation & Research**: Foster a culture of innovation by exploring emerging trends, technologies, and industry benchmarks.
- **Governance & Quality Assurance**: Monitor compliance with standards, ensure accountability, and track performance outcomes.
- **Support & Advisory Services**: Act as an internal consultant by offering subject matter expertise to projects and teams.

Table No. 7.5.1: List of project laboratory/research laboratory /Centre of Excellence

Sr.No	Name of the Laboratory	Relevance to POs/PSO
1	Electric Vehicle	**PO: 1,2,3,45,11** • Engineering knowledge • Problem analysis • Design/development of solutions • Conduct investigations • Modern tool usage • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.
2	Robotics and Automation	**PO: 1,2,3,4,5,11** • Engineering knowledge • Problem analysis • Design/development of solutions • Conduct investigations • Modern tool usage • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.

3	Center of Excellence FRESH-IIGEM	**PO: 1,2,3,5,8,11** • Engineering knowledge • Problem analysis • Design/development of solutions • Modern tool usage • Individual and teamwork • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.
4	Drone	**PO: 1,3,5,8,11** • Engineering knowledge • Design/development of solutions • Modern tool usage • Individual and teamwork • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.
5	**Electric Mobility**	**PO: 1,2,3,4,5,11** • Engineering knowledge • Problem analysis • Design/development of solutions • Conduct investigations • Modern tool usage • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.
6	Artificial Intelligence and Machine Learning	**PO: 1,3,5,8,10,11** • Engineering knowledge • Design/development of solutions • Modern tool usage • Individual and teamwork • Project management and finance • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.

7	Cloud Computing	**PO: 1,3,5,8,11** • Engineering knowledge • Design/development of solutions • Modern tool usage • Individual and teamwork • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.
8	DevOps	**PO: 1,3,5,8,11** • Engineering knowledge • Design/development of solutions • Modern tool usage • Individual and teamwork • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.
9	Embedded System and IOT	**PO: 1,2,3,4,5,11** • Engineering knowledge • Problem analysis • Design/development of solutions • Conduct investigations • Modern tool usage • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.
10	Full Stack Web Development	**PO: 1,3,5,8,11** • Engineering knowledge • Design/development of solutions • Modern tool usage • Individual and teamwork • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.

11	Sales Force	**PO: 1,3,5,8,11** • Engineering knowledge • Design/development of solutions • Modern tool usage • Individual and teamwork • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.
12	UI/UX Design	**PO: 1,3,5,8,11** • Engineering knowledge • Design/development of solutions • Modern tool usage • Individual and teamwork • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.
13	VLSI	**PO: 1,2,3,45,11** • Engineering knowledge • Problem analysis • Design/development of solutions • Conduct investigations • Modern tool usage • Life-long learning. **PSO: 1,2,3** • Understand and solve electrical problems using basic science and engineering. • Use tools and skills to create smart solutions for industry. • Work on drives, control, and power systems for a better and greener future.

1. Centre of Excellence - Electric Vehicle

Objectives:

- **Develop Core Competencies in EV Components and Green Energy**
- **Bridge Academia and Industry for Dynamic Learning:**
- **Hands-On and Software-Based Practical Training:**
- **Holistic Curriculum Covering Engineering and Emerging Technologies**

Mastery of Industry-Standard Software Tools:

INTERNATIONAL JOURNAL

S.No	Author(s)	Title	Journal name	Journal ISSN No	Year & Month	Vol no.	Page no	DOI	Database (WOS/ Scopus/ SCI / SCIE/ UGC)
1.	Sridharan, S. (https://www.scopus.com/authid/detail.uri?authorId=56872498100), Sivakumar, S. (https://www.scopus.com/authid/detail.uri?authorId=56870916300), Shanmugasundaram, N. (https://www.scopus.com/authid/detail.uri?authorId=57202035389), Swapna, S. (https://www.scopus.com/authid/detail.uri?authorId=57196298733), VasanPrabhu, V. (https://www.scopus.com/authid/detail.uri?authorId=57200657564)	A hybrid approach based energy management for building resilience against power outage by shared parking station for EVs	Renewable Energy	0960-1481	Aug 2023	Volume 216		10.1016/j.renene.2023.119002	SCIE

2.	Sridharan, S. (https://www.scopus.com/authid/detail.uri?authorId=56872498100), Shanmugasundaram, N. (https://www.scopus.com/authid/detail.uri?authorId=57202035389), Anna Devi, E. (https://www.scopus.com/authid/detail.uri?authorId=56530739600), VasanPrabhu, V. (https://www.scopus.com/authid/detail.uri?authorId=58699299700), Velmurugan, P. (https://www.scopus.com/authid/detail.uri?authorId=57517265800)	Slime Mould Algorithm (SMA) and Adaptive Neuro-Fuzzy Inference (ANFIS)-Based Energy Management of FCHEV Under Uncertainty	IETE Journal of Research	1886-1784 (Online) (https://portal.issn.org/resource/ISSN/1886-1784)	MAY 2023	Volume 30	2683–2723,	https://www.tandfonline.com/doi/abs/10.1080/03772063.2023.2273300	SCIE
3.	Venkatesh Kumar C,AbhayChaturvedi, Arvin Tony A,P. V. V. S. SrinivasORCIDIcon,P. S. Ranjit,RaviRastogi,M. R. Arun&A. Rajaram	AI-IOT-Based Adaptive Control Techniques for Electric Vehicles	Electric Power Components and Systems - Taylor & Francis		JAN 2024			https://doi.org/10.1080/15325008.2024.2304685 (https://doi.org/10.1080/15325008.2024.2304685)	SCIE

INTERNATIONAL CONFERENCE

S.No	Author(s)	Month & Year	Title	Name of the Conference	Venue	DOI	Scopus
1.	Chandrika, V.S. (https://www.scopus.com/authid/detail.uri?authorId=56049773200), Pradeep, J. (https://www.scopus.com/authid/detail.uri?authorId=38362032900), Sivakumar, A. (https://www.scopus.com/authid/detail.uri?authorId=57784786600), Krishnan, T.S. (https://www.scopus.com/authid/detail.uri?authorId=57223096968), Boopathi, S. (https://www.scopus.com/authid/detail.uri?authorId=57312510800)	2023	Theoretical study on power distribution systems for electric vehicles	Intelligent Engineering Applications and Applied Sciences for Sustainability		DOI: 10.4018/979-8-3693-0044-2.ch001	**BOOK CHAPTER**
2.	Mani Sha N , Dr. V. Chamundeeswari , Nasrin M , Maria Shirley John L M	May 2023	Photo-voltaic (PV) based Electric Vehicle Charging using Zeta converter	9th International Conference on Electrical Energy Systems ICEES - 2023	SSN college of Engineering	10.1109/ICEES57979.2023.10110297 (https://doi.org/10.1109/ICEES57979.2023.10110297)	SCOPUS/WOS

3.	Abhinavsan, E. (https://www.scopus.com/authid/detail.uri?authorId=58285411000), Velmurugan, P. (https://www.scopus.com/authid/detail.uri?authorId=57517265800), Sridharan, S. (https://www.scopus.com/authid/detail.uri?authorId=57615308500)	May 2023	Analysis of Zeta Converter Based Hybrid Energy Storage System For V2G Integration	9th International Conference on Electrical Energy Systems, ICEES 2023,	SSN college of Engineering	10.1109/ICEES57979.2023.10110125 (https://doi.org/10.1109/ICEES57979.2023.10110125)	SCOPUS/WOS
4.	Divya, G. (https://www.scopus.com/authid/detail.uri?authorId=57219473221), Sridharan, S. (https://www.scopus.com/authid/detail.uri?authorId=57615308500), Velmurugan, P. (https://www.scopus.com/authid/detail.uri?authorId=57517265800)	May 2023	Integrated Interleaved Luo Converter with Buck Converter Designed for Electric Vehicle Application	9th International Conference on Electrical Energy Systems	SSN college of Engineering	10.1109/ICEES57979.2023.10110050 (https://doi.org/10.1109/ICEES57979.2023.10110050)	SCOPUS/WOS
5.	Karthikeyan, M., Nivas, M., UmeshPrabhu, H., Ramesh Babu, M	14-16 March 2024	Improved State-Of-Charge Estimation Algorithms for Lithium-ion Batteries in Electric Vehicles	IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing, INCOS 2024.		10.1109/INCOS59338.2024.10527653 (https://doi.org/10.1109/INCOS59338.2024.10527653)	SCOPUS/WOS
6.	Anbarasan, P. (https://www.scopus.com/authid/detail.uri?authorId=57206446171), Kumar, S. (https://www.scopus.com/authid/detail.uri?authorId=59140830100), Antony, R.C. (https://www.scopus.com/authid/detail.uri?authorId=59141027500)	14-16 March 2024	Modeling, Simulation, Time Response and Stability Analysis of Fuel Cell Based DC-DC Converter for EV Applications	2024 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing, INCOS 2024 - Proceedings, 2024		10.1109/INCOS59338.2024.10527771 (https://doi.org/10.1109/INCOS59338.2024.10527771)	SCOPUS

2.Centre of Excellence – Robotics and Automation

Main Objectives of the Research Centre:

1. **Innovative Research**
2. **Industrial Collaboration**
3. **Technology Development**
4. **Education & Training**
5. **Sustainability & Efficiency**

CONTROL SYSTEM FOR ROBOTICS AND AUTOMATION

S.No	Name	Title of the paper	Journal/Conf	Title of journal/Conf, year, Volume & page numbers)
1.	Jayarama Pradeep, A. Jamna RamakrishnannSasikumar	Low-Cost Voice-Controlled Prosthetic Arm with Five Degrees of Freedom	International Journal	IETE Journal of Research, Aug 2021, Page No. 1-6

3 Center of Excellence FRESH-IIGEM

Unique MEP Engineering Pvt. Ltd., (UTA) has rich expertise in training both fresh and Experienced Engineers updating the skills of practicing Engineers catering to the demands of the competitive field facing global competition. All the courses of this Academy are job oriented.

This is an initiative to encourage and pave way for the students in getting into the core industry. We would be happy to welcome you aboard in this mission and elevate the institution to International standards.We are in the field more than 12 years in training fresh & practicing Engineers in.

- **HVAC**
- **Electrical**
- **Plumbing**
- **Fire-fighting (Designing &Draughting**
- **Revit MEP**

4.Center of Excellence- Drone

The Center focuses on four key pillars:

1. Research & Development

2. Training & Certification

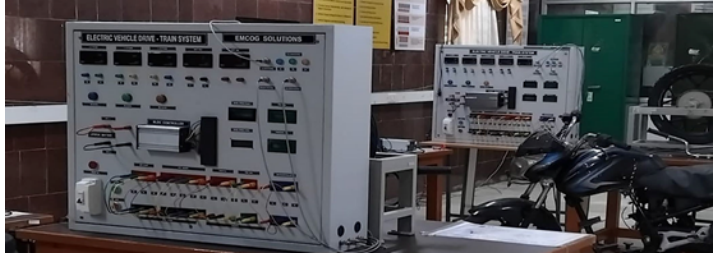
3. Testing & Validation

4. Policy & Industry Support

5.Center of Excellence- Electric Mobility

Our E-Mobility lab is equipped with state-of-the-art facilities to foster research and development in electric mobility technologies in Lithium Cells, Lithium Battery pack, 2 Wheel Power train, 3 wheel power trains and Intra-Vehicle Networking

- Litium cell Analyzer
- Battery pack Analyzer
- **2-wheel hub setup**
- **2 wheel mid-drive setup**
- **Intra vehicle networking setup**



Artificial Intelligence and Machine Learning

CLOUD COMPUTING

Embedded System and IOT

FULL STACK WEB DEVELOPMENT

VLSI DESIGN

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)	1440	72	44	111	80
2023-24(CAYm1)	1440	72	52	128	93

2024-25(CAY)	1500	75	57	138	98

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

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

Items	Budgeted in 2024-25	Actual Expenses in 2024-25 till	Budgeted in 2023-24	Actual Expenses in 2023-24 till	Budgeted in 2022-23	Actual Expenses in 2022-23 till	Budgeted in 2021-22	Actual Expenses in 2021-22 till
Infrastructure Built-Up	210000000	168288344	200000000	166360721	110000000	82437263	70000000	53576288
Library	17000000	15138014	16500000	14905787	14000000	12124438	9500000	8057575
Laboratory equipment	37500000	34337454	47750000	43016973	24000000	21190541	7000000	6065438
Teaching and non-teaching staff salary	585000000	587785565	505000000	504356088	385000000	385169982	307000000	305342141
Outreach Programs	3100000	2909227	6600000	5952700	1100000	976977	1000000	898640
R&D	110000000	99391146	68000000	61303675	20000000	17012295	16000000	13952019
Training, Placement and Industry linkage	19500000	17456715	35800000	32225743	35600000	30935280	5100000	4432196
SDGs	220000000	202209574	138400000	124721269	39800000	34611220	35000000	28385141
Entrepreneurship	15000000	13709124	9400000	8455679	2700000	2346523	2200000	1924416
Others, specify Administrative Expenditure	27500000	27418247	18800000	16911359	5400000	4693046	4500000	3848833
Total	**1244600000**	**1168643410**	**1046250000**	**978209994**	**637600000**	**591497565**	**457300000**	**426482687**

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

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

Items	Budgeted in 2024-25	Actual Expenses in 2024-25 till	Budgeted in 2023-24	Actual Expenses in 2023-24 till	Budgeted in 2022-23	Actual Expenses in 2022-23 till	Budgeted in 2021-22	Actual Expenses in 2021-22 till
Laboratory equipment	5152400	2769441	660000	610991	519000	208446	1346000	898640
Software	0	0	0	0	0	0	0	0
SDGs	0	331679	0	256000	0	8000	0	0
Support for faculty development	0	474000	0	714000	0	137500	0	0
R & D	0	37400	5263893	5270768	0	33250	0	0
Industrial Training, Industry expert, Internship	4577500	3972600	4202000	4095805	1777500	1307920	1244500	466500
Miscellaneous Expenses*	2117750	1042036	865000	1229993	854000	823000	853750	587480
Total	**11847650**	**8627156**	**10990893**	**12177557**	**3150500**	**2518116**	**3444250**	**1952620**