NATIONAL BOARD OF ACCREDITATION

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

Program Name : Electronics & Communication Engineering	**Discipline**: Engineering & Technology
Level : Under Graduate	**Tier**: 1
Application No: 10451	**Date of Submission**: 03-04-2025

PART A- Profile of the Institute

A1.Name of the Institute: Chitkara University, Punjab	
Year of Establishment : 2010	Location of the Institute:
A2. Institute Address: Chandigarh-Patiala National Highway, Rajpura	
City:Patiala	State:Punjab
Pin Code:140401	Website:www.chitkara.edu.in
Email:cuaqac@chitkara.edu.in	Phone No(with STD Code):-
A3. Name and Address of the Affiliating University (if any):	
Name of the University :	City:
State :	Pin Code:
A4. Type of the Institution: University	
A5. Ownership Status:	

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

- No. of UG programs: **8**
- No. of PG programs: **10**

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	Computer Application	PG	Master of Computer Application	2011	--	Computer Application
2	Engineering & Technology	UG	Civil Engineering	2018	--	Civil Engineering
3	Engineering & Technology	PG	Computer Science and Engineering	2011	--	Computer Science and Engineering
4	Engineering & Technology	UG	Computer Science and Engineering	2011	--	Computer Science and Engineering
5	Engineering & Technology	UG	Computer Science and Engineering (Artificial Intelligence)	2021	--	Computer Science and Engineering (Artificial Intelligence)
6	Engineering & Technology	UG	Electrical Engineering	2016	--	Electrical Engineering
7	Engineering & Technology	UG	Electronics & Communication Engineering	2011	--	Electronics and Communication Engineering
8	Engineering & Technology	PG	Electronics & Communication Engineering	2011	--	Electronics and Communication Engineering
9	Engineering & Technology	UG	Mechanical Engineering	2011	--	Mechanical Engineering

10	Engineering & Technology	PG	Mechanical Engineering	2011	--	Mechanical Engineering
11	Engineering & Technology	UG	Mechatronics Engineering	2018	--	Mechatronics Engineering
12	Management	PG	Master of Business Administration	2011	--	Management
13	Pharmacy	PG	Pharm D	2014	--	Pharmacy
14	Pharmacy	PG	Pharmaceutics	2011	--	Pharmacy
15	Pharmacy	PG	Pharmacology	2013	--	Pharmacy
16	Pharmacy	UG	Pharmacy	2011	--	Pharmacy
17	Pharmacy	PG	Pharmacy Practice	2013	--	Pharmacy
18	Pharmacy	PG	Regulatory Affairs	2020	--	Pharmacy

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

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

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

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

No Record

PART-B: Program information

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

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

SR.NO.	PROGRAM NAME	PROGRAM APPLIED LEVEL	YEAR OF START / YEAR OF CLOSED	SANCTIONED INTAKE	INCREASE/DECREASE INTAKE (if any)	YEAR OF INCREASE/DECREASE	CURRENT INTAKE	YEAR OF AICTE APPROVAL	AICTE/COMPETENT AUTHORITY ARROVAL DETAILS	ACCREDITATION STATUS	FROM	TO	NO. OF TIMES PROGRAM ACCREDITED
1	Electronics & Communication Engineering	UG	2011 / --	60	Yes	2024	90	2024	BOG	Eligible but not applied	--	--	0

Sanctioned Intake for Last Five Years for the Electronics & Communication Engineering	
Academic Year	**Sanctioned Intake**
2024-25	90
2023-24	60
2022-23	60
2021-22	30
2020-21	30
2019-20	60

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 Shivani Malhotra
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)	90	60	60	30	30	60	60
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	86	60	52	11	18	41	45
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	0	0	0	0	0	0
N3=Separate division if any	0	0	0	0	0	0	0
N4=Total no. of students admitted in the 1st year via all supernumerary quotas	0	0	0	0	0	0	0
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	86	60	52	11	18	41	45

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)	90	86	0	95.56
2023-24 (CAYm1)	60	60	0	100.00
2022-23 (CAYm2)	60	52	0	86.67

Average [(ER1 + ER2 + ER3) / 3] = 94.08≡ 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).	30.00	60.00	60.00
B=No. of students who graduated from the program in the stipulated course duration	18.00	41.00	45.00

Success Rate (SR)= (B/A) * 100	60.00	68.33	75.00

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 67.78

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)	7.64	7.54	8.41
Y=Total no. of successful students	60.00	52.00	11.00
Z=Total no. of students appeared in the examination	60.00	52.00	11.00
API [X*(Y/Z)]	7.64	7.54	8.41

Average API[(AP1+AP2+AP3)/3] : 7.86

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 2nd year/10)	7.71	8.46	8.83
Y=Total no. of successful students	52.00	11.00	18.00
Z=Total no. of students appeared in the examination	52.00	11.00	18.00
API [X * (Y/Z)]	7.71	8.46	8.83

Average API [(AP1 + AP2 + AP3)/3] : 8.33

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)	8.47	8.76	9.03
Y=Total no. of successful students	11.00	18.00	41.00
Z=Total no. of students appeared in the examination	11.00	18.00	41.00
API [X*(Y/Z)]:	8.47	8.76	9.03

Average API [(AP1 + AP2 + AP3)/3] : 8.75

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	30.00	60.00	60.00
X=No. of students placed	15.00	41.00	44.00
Y=No. of students admitted to higher studies	3.00	0.00	1.00
Z= No. of students taking up entrepreneurship	0.00	0.00	0.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	60.00	68.33	75.00

Average Placement Index = (P_1 + P_2 + P_3)/3: 67.78 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 Harsimran Jit Kaur	XXXXXXX79H	Ph.D	Chitkara University	Electronics & Communication Engineering	01/07/2009	15.8	Lecturer	Professor	01/01/2022	Regular	Yes		No
2	Dr Manish Sharma	XXXXXXX86L	Ph.D	Banasthali Vidyapith	Electronics & Communication Engineering	05/08/2019	5.7	Professor	Professor	05/08/2019	Regular	Yes		No
3	Dr Shivani Malhotra	XXXXXXX98G	Ph.D	Chitkara University	Electronics & Communication Engineering	17/03/2006	19	Lecturer	Professor	01/06/2019	Regular	Yes		Yes
4	Dr Rajvir Singh	XXXXXXX08G	Ph.D	Chitkara University	Electronics & Communication Engineering	01/06/2005	19.9	Lecturer	Associate Professor	02/10/2023	Regular	Yes		No
5	Dr Preeti Sharma	XXXXXXX65G	Ph.D	Thapar Institute of Engineering and Technology	Electronics & Communication Engineering	25/07/2005	19.7	Lecturer	Associate Professor	01/08/2011	Regular	Yes		No
6	Dr Gurjinder Singh	XXXXXXX00J	Ph.D	Chitkara University	Augmented reality Learning System	03/01/2011	14.2	Lecturer	Associate Professor	01/07/2022	Regular	Yes		No
7	Dr Poonam Gupta	XXXXXXX08D	Ph.D	Chitkara University	Electronics & Communication Engineering	25/07/2005	19.7	Lecturer	Associate Professor	01/11/2016	Regular	Yes		No
8	Dr Amanpreet Sandhu	XXXXXXX11F	Ph.D	Chitkara University	Electronics and Communication-Microelectronics	28/09/2005	19.5	Lecturer	Associate Professor	01/11/2016	Regular	Yes		No
9	Dr Deepti Prit Kaur	XXXXXXX03L	Ph.D	Chitkara University	Electronics & Communication Engineering	25/06/2007	17.8	Lecturer	Professor	01/01/2025	Regular	Yes		No
10	Dr Meenu Garg	XXXXXXX29R	Ph.D	Chitkara University	Image Processing	18/07/2011	13.8	Assistant Professor	Associate Professor	26/06/2019	Regular	Yes		No

11	Dr Nitin Kumar Saluja	XXXXXXX13M	Ph.D	Thapar University	Electronics & Communication Engineering	03/03/2014	11	Assistant Professor	Associate Professor	01/01/2019	Regular	Yes		No
12	Dr Rajeev Kumar	XXXXXXX82A	Ph.D	Banasthali Vidyapith	Electronics & Communication Engineering	14/06/2019	5.9	Assistant Professor	Associate Professor	01/07/2022	Regular	Yes		No
13	Dr Lipika Gupta	XXXXXXX50A	Ph.D	Chitkara University	Electronics & Communication Engineering	28/07/2011	13.8	Associate Professor	Professor	01/04/2024	Regular	Yes		No
14	Dr Priyanka Malhotra	XXXXXXX98J	Ph.D	Chitkara University	Electronics & Communication Engineering	03/10/2006	18.5	Lecturer	Associate Professor	01/06/2022	Regular	Yes		
15	Dr Rashpinder Kaur	XXXXXXX81N	Ph.D	Chitkara University	Electronics & Communication Engineering	01/10/2008	16.5	Lecturer	Associate Professor	01/07/2024	Regular	Yes		
16	Dr Isha Gupta	XXXXXXX24R	Ph.D	Chitkara University	Electronics & Communication Engineering	01/08/2014	10.7	Assistant Professor	Assistant Professor		Regular	Yes		
17	Dr Amit Kumar	XXXXXXX46G	Ph.D	Chitkara University	Electronics & Communication Engineering	01/07/2015	9.8	Assistant Professor	Assistant Professor		Regular	Yes		
18	Dr Rubina Dutta	XXXXXXX58H	Ph.D	Chitkara University	Electronics & Communication Engineering	01/07/2015	9.8	Assistant Professor	Assistant Professor		Regular	Yes		
19	Dr Swapandeep Kaur	XXXXXXX19C	Ph.D	Chitkara University	Electronics & Communication	01/08/2016	8.7	Assistant Professor	Assistant Professor		Regular	Yes		
20	Dr Kulbhushan Sharma	XXXXXXX00G	Ph.D	Chitkara University	Electronics & Communication Engineering	05/09/2020	4.6	Assistant Professor	Assistant Professor		Regular	Yes		
21	Dr Shubham Gargrish	XXXXXXX06J	Ph.D	Chitkara University	Electronics & Communication Engineering	15/03/2022	3	Assistant Professor	Assistant Professor		Regular	Yes		
22	Dr Vatsala Anand	XXXXXXX04Q	Ph.D	Chitkara University	Image Processing	01/12/2022	2.3	Assistant Professor	Assistant Professor		Regular	Yes		
23	Dr Sonam Agarwal	XXXXXXX61C	Ph.D	Chitkara University	Electronics & Communication Engineering	20/01/2023	2.1	Assistant Professor	Assistant Professor		Regular	Yes		

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

C2. Student-Faculty Ratio (SFR)

No. of UG(Engineering) programs in Department including allied departments/ clusters (UGn):
UG1=1st UG program
UGn=nth UG program
B= No. of Students in UG 2nd year (ST)
C= No. of Students in UG 3rd year (ST)

D= No. of Students in UG 4th year (ST)

No. of PG (Engineering) programs in Department including allied departments/ clusters (PGm):

PG1=1st PG program.

PGm=mth PG program

A= No. of Students in PG 1st year

B= No. of Students in PG 2nd year

Student Faculty Ratio **(SFR)** = S/F

S= No. of students of all programs in the Department including all students of allied departments/clusters.

No. of students (ST)=Sanctioned Intake (SA)+ Actual admitted students via lateral entry including leftover seats (L) if any (limited to 10 % of SA)

Students who admitted under supernumerary quotas (SNQ, EWS, etc) will not be considered in calculating SFR value. Those students are exempted.

F=Total no. of regular or contractual faculty members (Full Time) in the Department, including allied departments/clusters (excluding first year faculty (The faculty members who have a 100% teaching load in the first-year courses)).

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

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

Description	CAY(2024-25)	CAYm1 (2023-24)	CAYm2 (2022-23)
UG1.B	60	60	30
UG1.C	60	30	30
UG1.D	30	30	60
UG1: Electronics & Communication Engineering	**150**	**120**	**120**
DS=Total no. of students in all UG and PG programs in the Department	150	120	120
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=** 150	**S2=** 120	**S3=** 120
DF=Total no. of faculty members in the Department	23	23	21
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=** 23	**F2=** 23	**F3=** 21
FF=The faculty members in F who have a 100% teaching load in the first-year courses	4	4	4
Student Faculty Ratio (SFR)=S/(F-FF)	**SFR1= 7.89**	**SFR2= 6.32**	**SFR3= 7.06**
Average SFR for 3 years	**SFR= 7.09**		

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)	23	0	7.00	82.14
2023-24(CAYm1)	23	0	5.00	115.00
2022-23(CAYm2)	19	2	5.00	99.00

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	1.00	4.00	1.00	11.00	5.00	8.00
2023-24	1.00	3.00	1.00	10.00	4.00	10.00
2022-23	1.00	3.00	1.00	9.00	4.00	9.00
Average	RF1=1.00	AF1=3.33	RF2=1.00	AF2=10.00	RF2=4.33	AF2=9.00

C5. Visiting/Adjunct Faculty/Professor of Practice

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

(CAYm1)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Deepak Sajwan	Visiting faculty	Quantitative Aptitude Center	Numerical Ability and Logical Reasoning	90.00
2	Ms. Ritika Chaudhary	Visiting faculty	Languafina Global Solutions LLP	Life Skills	60.00
3	Prof. T.L. Singal	Adjunct faculty	Freelancer	1. Analog and Digital Communication 2. Wireless & Mobile Communication	154.00

(CAYm2)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Deepak Sajwan	Visiting faculty	Ekpathshala	Numerical Ability and Logical Reasoning	86.00
2	Ms. Ritika Chaudhary	Visiting faculty	Languafina Global Solutions LLP	Life Skills	65.00
3	Prof. T.L. Singal	Adjunct faculty	Freelancer	1. Analog and Digital Communication 2. Wireless & Mobile Communication	100.00

(CAYm3)

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Deepak Sajwan	Visiting faculty	Ekpathshala	Numerical Ability and Logical Reasoning	90.00
2	Ms. Ritika Chaudhary	Visiting faculty	Languafina Global Solutions LLP	Life Skills	60.00

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	70	51	26
2	No. of peer reviewed conference papers published	53	17	41

3	No. of books/book chapters published	14	10	11

C7. Sponsored Research Project

Table No. C7.1: List of sponsored research projects received from external agencies.

(CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25
Dr. Deepti Prit Kaur	-	Department of Electronics and Communication	Ed-Immerse: Integration of Immersive technology in STEM Education	Indian National Academy of Engineering, New Delhi	2 years	24.16
Dr. Shivani Malhotra		Department of Electronics and Communication	Establishment of Community Resilience Resource Centre (CRRC) in Rajpura, Shambhu Kalan, Patiala Rural, Dera Bassi and SAS Nagar Blocks of Patiala Districts, Punjab State	Department of Science & Technology, New Delhi	3 years	65.51
						Amount received (Rs.):89.67

(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. Deepti Prit Kaur		Department of Electronics and Communication	Parivartan – Creating Scientific Awareness among Rural Women for Improving Quality of Life	Department of Science & Technology, New Delhi	1 Year	14.80
						Amount received (Rs.):14.80

(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 Poonam Gupta		Department of Electronics and Communication	Design And Implementation Of Hash Based Watermarking Scheme For The Authentication of Video	Seventhedge Consulting Service Pvt Ltd., 433 B Wing 4th Floor Laxmi Business Park, New Link Road Andheri (W), Mumbai, India	3 Years	42.19
Dr Amanpreet Sandhu		Department of Electronics and Communication	An investigation of Private FM Radio Channels with Special Reference to their Content & Audience Feedback	Uday Communications, Sco-60-62, First Floor, Sector-17C, Chandigarh, India	2 Years	27.26
						Amount received (Rs.):69.45

Total Amount (Lacs) Received for the Past 3 Years: 173.92

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. Gurjinder Singh		Department of Electronics and Communication	Logic building and designing of electronics circuits for specified automation	80 Wash LLP, 28-C, Friends Colony, Hisar	2 months	1.36
Dr. Nitin Kumar Saluja		Department of Electronics and Communication	PCB Trace Antenna Efficiency Testing	Amol Bhardwaj, Walnut Medical Private Limited, Plot no. 132, JLPL Industrial Park, Sector 82, Mohali, Punjab, 160055	1 month	0.10
						Amount received (Rs.):1.46

(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
Mr. Varinder Singh	Dr. Nitin Kumar Saluja	Department of Electronics and Communication	Design of 3kW vacuum assisted hybrid microwave-IR dryer for food drying application'	"NuTech Dairy Engineers Pvt Ltd, 34, HSIIDC, Food Park, Saha - Shahabad Hwy, Ambala Cantt, Haryana 134003"	1 month	1.30
						Amount received (Rs.):1.30

(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
Rashpinder Kaur	Dr Archana Mantri	Department of Electronics and Communication	Assessing the impact of the lean startup methodology on relationships between entrepreneurs and coaches in the setting of a startup accelerator	Elitmus Evaluation Private Limited L-29 Elitmus Knowledge Park Bangalore-560102 India	2 Years	26.06
Dr. Gurjinder Singh	Dr. Harsimranjit Kaur	Department of Electronics and Communication	A Mixed Method Study Examining The Impact Of Content And Language Integrated Learning (Clil) Pedagogy On Selected Learning Outcomes Of Primary Grade Students	Edisher Specialities Private Limited #124 Shakti Nagar Derabassi India	3 Years	23.25
Rubina Dutta	Dr Gurjinder Singh	Department of Electronics and Communication	Design Of Augmented Reality Learning System And Analysis Of Its Effectiveness On Cognitive Load And Technical Skills Of Engineering Students	Giggle Galaxy Private Limited Building A OAK Woods Hills S.No 23/3+4 Opp Pan Card Club Banner Pune-411045 India	2 Years	24.71
Dr. Gurjinder Singh	Dr. Nitin Kumar Saluja	Department of Electronics and Communication	Agri Leadership Course on Farmer Producer Company Administration and Management	Mr. Kamaljeet Director Kisan Sanchar D-21 Shalimar Enclave Near K-Area Dhakoli Zirakpur Punjab - 160104 India	3 Days	2.50
Dr. Nitin Kumar Saluja		Department of Electronics and Communication	Study the effects of microwave radiations on different types of fabrics	80 Wash LLP 28 C Friends Colony HISAR Haryana 125005 India	5 months	0.25
Dr. Nitin Kumar Saluja		Department of Electronics and Communication	Develop a method of analyzing signals from Dish antenna to predict the weather condition	GFF Innovations Pvt. Ltd. 94-D Block Gali No 3 Inderpuri Mohalla Near Shiv Chowk Sirsa HR-125055 India	3 months	0.25
						Amount received (Rs.):77.02

Total amount (Lacs) received for the past 3 years: 79.78

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. Nitin Kumar Saluja	Addressing Road Safety Challenges: Understanding Fog Conditions	2 Years	1.55	0.20	Research Papers Publication
Dr. Nitin Kumar Saluja	Advanced Vacuum Microwave Reactor for Renewable Biofuel Synthesis	2 Years	1.88	1.02	Journal Paper Research Papers PublicationPublication
Dr. Nitin Kumar Saluja	SYSTEM FOR DETECTION OF FOG	1 Year	0.25	0.25	Patents filed/published
Dr. Nitin Kumar Saluja	INTELLIGENT AND INTERNET CONNECTED SPEED LIMITED FOR VEHICLES	1 Year	0.27	0.27	Patents filed/published
Dr. Nitin Kumar Saluja	PANIC BUTTON SYSTEM FOR VEHICLES	1 Year	0.15	0.15	Patents filed/published
Dr. Preeti Sharma	SYSTEM AND METHOD FOR ENHANCING LOW LIGHT IMAGE QUALITY	1 Year	0.15	0.15	Patents filed/published
Dr. Preeti Sharma	AUTOMATED PORTIERE FOR SMART HOME	1 Year	0.15	0.15	Patents filed/published
Dr Amanpreet Sandhu	PROJECTILE PROPULSION MECHANISM FOR A FIREARM	1 Year	0.27	0.27	Patents filed/published
Dr. Priyanka Malhotra	DEEP LEARNING-BASED DIAGNOSIS OF THORACIC DISEASES AND DISORDERS	1 Year	0.15	0.15	Patents filed/published
Dr. Shivani Malhotra	A RETROFIT MACHINE LEARNING BASED MILLING MACHINE	1 Year	0.15	0.15	Patents filed/published
Dr. Shivani Malhotra	CLOTH STAND TO PROTECT CLOTHES FROM RAIN	1 Year	0.34	0.34	Patents filed/published
Dr. Shivani Malhotra	LIVE OPD REGISTRATION AND UPDATING DISPLAY CHART SYSTEM FOR HOSPITALS	1 Year	0.34	0.34	Patents filed/published
Dr. Harsimran Jit Kaur	A HOME APPLIANCE AND A METHOD FOR USING THE SAME	1 Year	0.15	0.15	Patents filed/published
Dr. Harsimran Jit Kaur	ZEBRA CROSSING SAFETY PROTECTION SYSTEM	1 Year	0.27	0.27	Patents filed/published
Dr. Gurjinder Singh	SYSTEM AND METHOD FOR AUGMENTED REALITY-BASED ONLINE SHOPPING	1 Year	0.28	0.28	Patents filed/published
Dr. Meenu Garg	A SYSTEM AND A METHOD FOR DETECTING VERTEBRAL FRACTURES	1 Year	0.27	0.27	Patents filed/published
Dr. Meenu Garg	SYSTEM AND METHOD FOR KITCHEN SAFETY	1 Year	0.34	0.34	Patents filed/published
Dr. Rubina Dutta	SYSTEM CONTROLLED FUSION REACTOR UTILIZING ELECTRIC DIPOLAR REACTOR AND CORONA DISCHARGE PRINCIPLE	1 Year	0.27	0.27	Patents filed/published
Dr. Swapandeep Kaur	SYSTEM TO REMOTE CONTROL WALL CLOCKS	1 Year	0.27	0.27	Patents filed/published
Dr. Rajeev Kumar	UWB ANTENNA WITH AN ACCURATE WLAN NOTCH BAND	1 Year	0.31	0.31	Patents filed/published
Dr. Rajeev Kumar	ROBOT ASSISTED REAL-TIME MULTI-SURFACE CRACK DETECTION AND ALERT SYSTEM	1 Year	0.15	0.15	Patents filed/published
Dr. Manish Sharma	MULTI-INPUT MULTI-OUTPUT (MIMO) ANTENNA FOR 5G APPLICATION	1 Year	0.30	0.30	Patents filed/published
Dr. Manish Sharma	INTEGRATED BLUETOOTH AND UWB FOUR-PORT MIMO ANTENNA WITH BAND STOP FILTERS	1 Year	0.08	0.08	Patents filed/published

Dr. Manish Sharma	"CONFORMAL 60.0 GHZ MIMO ANTENNA"	1 Year	0.08	0.08	Patents filed/published
Dr. Manish Sharma	EIGHT-PORT MIMO ANTENNA FOR IOT APPLICATIONS	1 Year	0.28	0.28	Patents filed/published
Dr. Manish Sharma	AN ANTENNA STRUCTURE AND A METHOD OF FABRICATING THE SAME	1 Year	0.35	0.35	Patents filed/published
Dr. Manish Sharma	CONFORMAL ULTRA-COMPACT NARROWBAND	1 Year	0.34	0.34	Patents filed/published
Dr. Kulbhushan Sharma	URINE ANALYZER DEVICE	1 Year	0.12	0.12	Patents filed/published
Dr. Kulbhushan Sharma	MULTIPURPOSE CLIP-LOCK BASED BROOM ASSEMBLY SYSTEM	1 Year	0.15	0.15	Patents filed/published
Dr. Lipika Gupta	ELECTRONIC LETTER AND PARCEL MAILBOX	1 Year	0.34	0.34	Patents filed/published
Dr. Vatsal Anand	MASSAGER ASSEMBLY	1 Year	0.34	0.34	Patents filed/published
			Amount received (Rs.): 10.34		

(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. Gurjinder Singh	To analyse calcium in water samples of Chitkara University and its surrounding villages using AAS	1 Year	1.75	1.67	Research Papers Publications
Dr. Nitin Kumar Saluja	Addressing Road Safety Challenges: Understanding Fog Conditions	2 Years	1.55	1.05	Research progression
Dr. Preeti Sharma	SYSTEM AND METHOD FOR RECOGNIZING PLANT DISEASES	1 Year	0.20	0.20	Patents filed/published
Dr. Preeti Sharma	SYSTEM AND METHOD FOR ADAPTIVE HYBRID IMAGE WATERMARKING WITH TWO WATERMARKS	1 Year	0.26	0.26	Patents filed/published
Dr Amanpreet Sandhu	PROJECTILE PROPULSION MECHANISM FOR A FIREARM	1 Year	0.27	0.27	Patents filed/published
Dr. Harsimran Jit Kaur	PORTABLE DEVICE FOR DRYING HAIR	1 Year	0.25	0.25	Patents filed/published
Dr. Harsimran Jit Kaur	A HOME APPLIANCE AND A METHOD FOR USING THE SAME	1 Year	0.23	0.23	Patents filed/published
Dr. Harsimran Jit Kaur	ZEBRA CROSSING SAFETY PROTECTION SYSTEM	1 Year	0.27	0.27	Patents filed/published
Dr. Gurjinder Singh	VIRTUAL REALITY SYSTEM TO MONITOR BEHAVIOUR OF RODENTS	1 Year	0.27	0.27	Patents filed/published
Dr. Gurjinder Singh	SYSTEM AND METHOD FOR AUGMENTED REALITY-BASED ONLINE SHOPPING	1 Year	0.27	0.27	Patents filed/published
Dr. Meenu Garg	SYSTEM TO SAFEGUARD A CCTV CAMERA	1 Year	0.25	0.25	Patents filed/published
Dr. Meenu Garg	A SYSTEM AND A METHOD FOR DETECTING VERTEBRAL FRACTURES	1 Year	0.27	0.27	Patents filed/published
Dr. Nitin Kumar Saluja	SYSTEM AND METHOD FOR MICROWAVE-ASSISTED DESALINATION OF WATER	1 Year	0.29	0.29	Patents filed/published
Dr. Nitin Kumar Saluja	SYSTEM AND METHOD FOR DETERMINING THE DEPRESSION SCORE OF THE SUBJECTS	1 Year	0.20	0.20	Patents filed/published
Dr. Rubina Dutta	AUTOMATED BEVERAGE DISPENSING SYSTEM FOR MEETING ROOM AND METHOD THEREOF	1 Year	0.25	0.25	Patents filed/published
Dr. Swapandeep Kaur	SYSTEM TO REMOTE CONTROL WALL CLOCKS	1 Year	0.27	0.27	Patents filed/published
Dr. Rajeev Kumar	UWB ANTENNA WITH AN ACCURATE WLAN NOTCH BAND	1 Year	0.27	0.27	Patents filed/published
Dr. Manish Sharma	"8 PORT SUPER-WIDEBAND FRACTAL MIMO ANTENNA FOR IOT APPLICATIONS"	1 Year	0.07	0.07	Patents filed/published
Dr. Manish Sharma	"A MONOPOLE FLARED DIRECTIONAL ANTENNA"	1 Year	0.07	0.07	Patents filed/published
Dr. Manish Sharma	SUPER-WIDEBAND MONOPOLE ANTENNA WITH THREE FILTERS	1 Year	0.07	0.07	Patents filed/published
Dr. Manish Sharma	"INTEGRATED BLUETOOTH SUPER-WIDEBAND ANTENNA WITH TRI NOTCHED BAND"	1 Year	0.07	0.07	Patents filed/published
Dr. Manish Sharma	SUPER-WIDEBAND DUAL FILTER ANTENNA	1 Year	0.07	0.07	Patents filed/published
Dr. Manish Sharma	ANTENNA FOR AUTOMATIC DEPENDENT SURVEILLANCE BROADCAST	1 Year	0.07	0.07	Patents filed/published
Dr. Manish Sharma	FRACTAL-FLOWER TRIPLE NOTCH ANTENNA	1 Year	0.07	0.07	Patents filed/published
Dr. Manish Sharma	MULTI-INPUT MULTI-OUTPUT (MIMO) ANTENNA FOR 5G APPLICATION	1 Year	0.30	0.30	Patents filed/published
Dr. Manish Sharma	INTEGRATED BLUETOOTH AND UWB FOUR-PORT MIMO ANTENNA WITH BAND STOP FILTERS	1 Year	0.31	0.31	Patents filed/published
Dr. Manish Sharma	"CONFORMAL 60.0 GHZ MIMO ANTENNA"	1 Year	0.08	0.08	Patents filed/published
Dr. Manish Sharma	EIGHT-PORT MIMO ANTENNA FOR IOT APPLICATIONS	1 Year	0.28	0.28	Patents filed/published
Dr. Kulbhushan Sharma	HIGH-RISE EMERGENCY ESCAPE SYSTEM	1 Year	0.25	0.25	Patents filed/published

Dr. Vatsal Anand	IOT-BASED SYSTEM FOR SORTING AND COLLECTING GARBAGE IN BINS	1 Year	0.20	0.20	Patents filed/published
			Amount received (Rs.): 9.03		

(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. Gurjinder Singh	Applications in Augmented Reality for Autism	1 Year	1.62	1.62	Patents filed/published
Dr. Nitin Kumar Saluja	NITINARI: Non-invasive tumor identification in NARI	2 Years	16.44	16.44	Research Papers Publications
Dr Amanpreet Sandhu	Faculty Information System and Method	1 Year	4.44	4.41	Patents filed/published
Dr. Rajeev Kumar	UWB MIMO Antenna with higher order band notch characteristics	1 Year	5.76	5.56	Patents filed/published
Dr. Preeti Sharma	DIAMOND-LIKE CARBON DIELECTRIC BASED GRAPHENE TFET	1 Year	0.10	0.10	Patents filed/published
Dr. Harsimran Jit Kaur, Dr. Shivani Malhotra	AUTOMATIC HEAD MASSAGING DEVICE	1 Year	0.10	0.10	Patents filed/published
Dr. Harsimran Jit Kaur, Dr. Shivani Malhotra	FOOT MASSAGING SOCK ASSEMBLY	1 Year	0.20	0.20	Patents filed/published
Dr. Harsimran Jit Kaur	ELECTRIC BARBEQUE ASSEMBLY	1 Year	0.20	0.20	Patents filed/published
Dr. Gurjinder Singh	ROBUST AND REAL-TIME AUGMENTED REALITY-BASED DRIVING ASSISTIVE SYSTEM	1 Year	0.10	0.10	Patents filed/published
Dr. Nitin Kumar Saluja	AUTOMATED RAT CAPTURING DEVICE	1 Year	0.04	0.04	Patents filed/published
Dr. Nitin Kumar Saluja	DEVICE FOR DETECTION OF PURITY OF A FLUID	1 Year	0.10	0.10	Patents filed/published
Dr. Rubina Dutta	A SURVEILLANCE SYSTEM AND DEVICE FOR TESTING MILK QUALITY	1 Year	0.10	0.10	Patents filed/published
Dr. Rubina Dutta	WATER PURIFICATION DEVICE AND METHOD	1 Year	0.23	0.23	Patents filed/published
Dr. Rubina Dutta	MENTAL HEALTH SCREENING KIOSK	1 Year	0.23	0.23	Patents filed/published
Dr. Manish Sharma	UWB-X BAND FLOWER-FRACTAL ANTENNA	1 Year	0.07	0.07	Patents filed/published
Dr. Manish Sharma	KEY SHAPED DUAL NOTCH UWB ANTENNA	1 Year	0.07	0.07	Patents filed/published
Dr. Manish Sharma	MICKEY SHAPED DUAL NOTCH UWB ANTENNA	1 Year	0.04	0.04	Patents filed/published
Dr. Kulbhushan Sharma	CIRCUIT AND A METHOD FOR OPERATING QUASI FLOATING BULK DIRECT GATE DRIVEN MOSFET	1 Year	0.10	0.10	Patents filed/published
Dr. Kulbhushan Sharma	COMPLEMENTARY SUPER SOURCE FOLLOWER METAL OXIDE SILICON FIELD EFFECT TRANSISTOR BASED FILTER	1 Year	0.10	0.10	Patents filed/published
Dr. Shubham Gargrish	FACILE FOR DEPLACER	1 Year	0.23	0.23	Patents filed/published
			Amount received (Rs.): 30.27		

Total amount (Lacs) received for the past 3 years : 49.64

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	Communication Lab	30	• 3 GHZ Spectrum Analyzer, HMS 3010 HAMEG • DSB/SSB Transmitter Trainer ST2201 • DSB/SSB Receiver Trainer ST2202 • FM Modulation and	16 Hours	Mr. Umesh Joshi	Lab Superintendent	BE (ECE)
2	VLSI Lab	30	• Cadence Standard Bundle 6.1.8 (EDA) • Xilinx Vivado Design Suite • CPLD Student Project Board • CPLD card (Xilinx 9572 no 84 adapter)	16 Hours	Mr. Madan Mohan	Lab Instructor	M.Sc. Physics (ES)
3	Electronique Design Center (EDC)	30	• STM32 Black pill Development Board • NUCLEO-64 BOARD • ARDUINO UNO R3 DIP • LORA 433 MHZ WIRELESS TRANSMITTER AND RECEIVER	19 Hours	Mr. Inderpreet Singh	Lab Instructor	Diploma (E.C.E)
4	IoT Innovation Lab	30	• Acer desktop Arduino MKR1000 Board • STMicroelectronics development board 511-STM32 (BL475E-IoT01A1) • Raspberry Pi 3 • Raspberry Pi	Even Sem- 16	Mr. Rakesh Kumar	Lab Instructor	M-Tech (ECE)
5	Measurements and Virtual Instrumentation (MVI) Lab	30	• ELVIS II Board • LabView Academic site license software • Desktop computer • Potentiometer as an error detector kit, PID controllers, DC positional	4 Hours	Mr. Subhash Kumar	Sr. Instructor	B. Tech.
6	Signal Processing Lab	30	• MATLAB 2024 Software • MATLAB 7.0 • MATLAB (2013b) • Desktop HCL-i3 • Acer-i5 • TMS320C6748 DSP Development Kit • DSP	Even Sem - 4 H	Mr. Madan Mohan	Lab Instructor	M.Sc. Physics (ES)
7	Larva Lab	30	• Laser cutting Machine	Even Sem- 8 H	Mr. Inderpreet Singh	Lab Instructor	Diploma (E.C.)
8	Electronics Circuits Lab	30	• DSO, 2- Channel 50 MHz • PN junction diode kit • Transistor characteristics kit • LED characteristics kit • MOSFET characteristics kit • Photodiode	Even Sem - 08	Mr. Madan Mohan	Lab Instructor	M.Sc. Physics (ES)
9	Embedded System (ESD) Lab	30	• STM32 L476 microcontroller • NFC reader ST25R3911B Nucleo expansion board • MEMS internal and environmental Nucleo expansion	Even Sem - 8	Mr. Rakesh Kumar	Lab Instructor	M-Tech (ECE)
10	Eureka Lab	30	All-in-one Desktops: 07	Even Sem- 16	Mr. Umesh Joshi	Lab Superintendent	BE (ECE)

D2. Safety Measures in Laboratories

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

Sr. No	Laboratory Name	Safety Measures
1	Communication Lab	• Code of Conduct (Do's and Don'ts) • Safety Instructions • Standard operating procedures (SOPs) for the equipment • Fire Extinguisher • Miniature Circuit Breaker (MCB) for electrical supply • Easy access to Emergency Exit
2	VLSI Lab	• Code of Conduct (Do's and Don'ts) • Safety Instructions • Standard operating procedures for Softwares • Fire Extinguisher • Miniature Circuit Breaker (MCB) for electrical supply • Easy acess to Emergency Exit

3	Electronique Design Center (EDC)	● Do's and Don'ts ● Safety Instructions ● Lab coat, gloves, safety goggles, closed-toe shoes ● Fire extinguisher ● First aid kit ● Miniature Circuit Breaker (MCB) for electrical supply ● Easy acess to Emergency Exit ● Standard operating procedures (SOPs) for all equipment ● Proper grounding and static discharge protocols (e.g., anti-static mats)
4	IoT Innovation Lab	● Code of Conduct (Do's and Don'ts) ● Safety Instructions ● Standard operating procedures ● Fire Extinguisher ● Miniature Circuit Breaker (MCB) for electrical supply ● Easy access to Emergency Exit
5	Measurements and Virtual Instrumentation (MVI) Lab	● Code of Conduct (Do's and Don'ts) ● Safety Instructions ● Standard operating procedures for Softwares ● Fire Extinguisher ● Miniature Circuit Breaker (MCB) for electrical supply ● Easy acess to Emergency Exit
6	Signal Processing Lab	● Code of Conduct (Do's and Don'ts) ● Safety Instructions ● Standard operating procedures for Softwares ● Fire Extinguisher ● Miniature Circuit Breaker (MCB) for electrical supply ● Easy acess to Emergency Exit
7	Larva Lab	● Do's and Don'ts ● Safety Instructions ● Lab coat, gloves, safety goggles, closed-toe shoes ● Fire extinguisher ● First aid kit ● Miniature Circuit Breaker (MCB) for electrical supply ● Easy acess to Emergency Exit ● Standard operating procedures (SOPs) for all equipment
8	Electronics Circuits Lab	● Code of Conduct (Do's and Don'ts) ● Safety Instructions ● Standard operating procedures for Softwares ● Fire Extinguisher ● First aid kit ● Miniature Circuit Breaker (MCB) for electrical supply ● Easy access to Emergency Exit ● Standard operating procedures (SOPs) for all equipment
9	Embedded System (ESD) Lab	● Code of Conduct (Do's and Don'ts) ● Safety Instructions ● Standard operating procedures ● Fire Extinguisher ● First aid kit ● Miniature Circuit Breaker (MCB) for electrical supply ● Easy access to Emergency Exit
10	Eureka Lab	● Code of Conduct (Do's and Don'ts) ● Safety Instructions ● Fire Extinguisher ● First aid kit ● Miniature Circuit Breaker (MCB) for electrical supply ● Easy access to Emergency Exit

D3. Project Laboratory/Research Laboratory

The following are the project laboratory/research laboratory /Centre of Excellence in the department of Electronics and Communication Engineering:

Sl. No.	Name of the Laboratory	Type of the Laboratory (project laboratory/ research laboratory / Centre of Excellence)	Utilization	Relevance to POs/PSOs
1	Centre for High Frequency and High Power	Research Laboratory	**Antenna Design & Testing:** Hands-on training in antenna design, fabrication, and performance evaluation using an anechoic chamber. **High-Frequency Component Analysis:** VNA for impedance matching, dielectric spectroscopy for material characterization up to 9 GHz. **High-Power Simulation:** COMSOL modeling for thermal management, electromagnetic field analysis, and structural integrity. **Food Safety & Adulteration Detection:** RF-based studies on shelf life, contamination analysis, and automated quality control. **Biomedical & Industrial Applications:** Investigating biological interactions with GHz-frequency waves and advanced sensing technologies.	PO1 – Application of fundamental principles in electromagnetics, RF engineering, and fabrication techniques to antenna design. PO2 – Ability to analyze and troubleshoot antenna performance issues, including impedance matching, radiation patterns, and beamforming. PO3 – Skill-building in designing antennas using software tools (e.g., HFSS, COMSOL) and fabricating prototypes. PO5 – Hands-on experience with simulation tools, network analyzers, and fabrication technologies to bridge theory and practice. PO10 – Preparing reports, presenting findings, and discussing experimental results in technical forums related to RF and antennas. PSO1 – Specialization in antenna structures for wireless communication and 5G applications. Fabrication & Prototyping Mastery PSO2 – Skill development in PCB-based antennas, microstrip designs, and advanced prototyping methods.

| 2 | KPIT Center of Mobility | Centre of Excellence | **Embedded System Development:**

Training students in real-time automotive software, microcontroller programming, and ECU design.

Vehicle Communication Protocols:

Hands-on experience with CAN and LIN for efficient in-vehicle networking.

Autonomous & Electric Vehicle Technologies:

Research and development in ADAS, battery management systems, and power electronics.

Simulation & Testing:

Utilizing MATLAB, Simulink, and hardware-in-the-loop (HIL) testing for automotive software validation. | PO1 – Provides a strong foundation in embedded systems, microcontrollers, and automotive software development.

PO2 – Encourages analytical thinking to solve real-world automotive challenges.

PO3 – Supports hands-on experience in designing embedded solutions for mobility applications.

PO5 – Involves industry-standard tools like MATLAB, Simulink, and AUTOSAR for automotive system design.

PO8 – Encourages ethical considerations in automotive safety and compliance.

PO11 – Helps students understand cost-effective automotive solutions and industry project workflows.

PSO1 – Enhances expertise in automotive embedded software, real-time operating systems, and sensor integration.

PSO2 – Bridges the gap between academic learning and industry requirements, aligning with KPIT's focus on mobility solutions. |
| 3 | Code Experience Center powered by CapeGemini | Centre of Excellence | **Network Protocols & Security:**

Hands-on training in TCP/IP, routing algorithms, and cybersecurity measures for secure communication.

Cloud-Based IoT Solutions:

Implementing cloud computing for scalable IoT applications, including real-time data processing and analytics.

Edge Computing & AI Integration:

Developing AI-driven network optimization techniques for smart communication systems. | PO1 - Understanding fundamental networking principles and security mechanisms.

PO2 - Identifying vulnerabilities and optimizing network security solutions.

PO3 - Implementing scalable cloud architectures for IoT applications.

PO5 – Utilizing cloud platforms for real-time data analytics and processing.

PO6 – Addressing societal needs through advanced wireless communication solutions.

PSO1 - Applying secure communication protocols in embedded systems, Enhancing embedded communication systems with AI-driven edge computing.

PSO2 – Integrating cloud computing with IoT-based communication systems, Developing optimized wireless networks for embedded applications. |

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)	180	9	6	14	84
2023-24(CAYm1)	180	9	7	19	104
2024-25(CAY)	210	10	7	19	94

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	500000000	491423285	440000000	468554011	160000000	170302543	140000000	141918786
Library	45000000	42052184	35000000	33641747	20000000	15950276	13000000	13291897
Laboratory equipment	305000000	302310833	250000000	241848666	40000000	37941977	35000000	31618314
Teaching and non-teaching staff salary	1600000000	1530657338	1500000000	1495241073	1200000000	1158841743	920000000	891416725
Outreach Programs	270000000	264664394	180000000	211731515	150000000	148937204	70000000	72921982
R&D	550000000	523467818	500000000	472759318	380000000	371954465	280000000	292895803
Training, Placement and Industry linkage	450000000	433561040	350000000	358314909	186000000	185839279	81000000	94469255
SDGs	21000000	20513546	20000000	17685205	12000000	11464001	20000000	9553334
Entrepreneurship	25000000	24519732	21500000	22820204	20000000	22632248	22200000	22193540
Others, specify	1684000000	1772593561	1503500000	1429510936	1282000000	1322768583	518800000	518973819
Total	**5450000000**	**5405763731**	**4800000000**	**4752107584**	**3450000000**	**3446632319**	**2100000000**	**2089253455**

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	2150000	553705	4000000	2350400	400000	16862	200000	346373
Software	500000	450361	1200000	1121000	500000	301201	500000	471254
SDGs	500000	424631	600000	501064	500000	297982	780000	716007
Support for faculty development	750000	716060	500000	373837	500000	475269	20000	22724
R & D	600000	2204502	1000000	2216925	1500000	1469402	1000000	1041651
Industrial Training, Industry expert, Internship	500000	1080016	500000	931797	600000	582780	500000	300528
Miscellaneous expenses	35000000	33765384	32200000	30973416	35000000	35251332	24000000	24432458
Total	**40000000**	**39194659**	**40000000**	**38468439**	**39000000**	**38394828**	**27000000**	**27330995**