Impetus-For a change...

2021-2022

Department of Electronics and Communication

KCG College of Technology

Technical Magazine

Editorial Members

Dr.Kavitha Balamurugan

Ms.B.Thyla

Allwin (UG Third Year)

Lavanya Pillai (UG Final Year)

Krithika (UG Third Year)

Department of Electronics and Communication

Vision of the Department

To become a Centre of excellence of global significance in Electronics and Communication engineering and producing competent professionals committed to nation building.

Mission of the Department

- Impart sound knowledge of Electronics and communication through innovative teaching learning process

- Establish laboratories equipped with modern state of art technology resources to facilitate research and consultancy

- Enhance the knowledge and skills of the faculty to incorporate the latest advancements

- Facilitate Industrial collaboration in socially responsive research activities

Program Educational Objectives

The graduates will

PEO 1 Have a successful career as technically competent, highly skilled professionals in

Electronics and communication engineering and its related fields

PEO 2 Demonstrate technical competence to provide solutions for real time Electronics and

Communication engineering problems

PEO3 Adopt technological challenges through skill upgradation in the relevant areas

PEO 4 Exhibit professionalism and ethical attitude in their work

Program Outcomes:

At the end of the program the student will be able to

PO1 - Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2 - Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3 - Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4 - Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5 - Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6 - Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7 - Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8 - Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9 - Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10 - Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11 - Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12 - Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes

The graduates after the completion of B.E Electronics and Communications will be able to

- **PSO1:** Apply the knowledge of Basic sciences, Electronics and Communication engineering fundamentals and specialization for solving complex problems in Electronics and Communication systems.
- **PSO2:** Design suitable electronic circuits and communication systems using modern tools such as PSPICE, MATLAB / Simulink, Assemblers, Cadence and NS2
- **PSO3**: Practice the ethics of their profession with a sense of social responsibility.

This academic year was very successful for the department of ECE. The various activities of the department are consolidated as follows:

About the Department

The Department of Electronics and Communication Engineering was established in the year 1998. Electronics and Communication Engineering is both a core subject and a swiftly advancing field, with new ideas emerging every day. From mobile phones to remote sensing, there are exciting avenues to explore. With technology becoming all pervasive in everyday life, opportunities for electronic engineers are plenty.

The department of Electronics & Communication Engineering has faculty members with a blend of youth and experience. All the faculty members of the department are post graduates, some of them from eminent institutions like IIT. The department has qualified and accomplished doctorates in various domains of Electronics and Communication. Faculty members of this department have considerable academic, industrial and research experience.

Academic performance of students

Department:

Academic year	Semester	No. of students appeared	No. of students Passed in all subjects	Pass percentage
2020-2021 Even semester	Second Semester	-	-	-
	Fourth Semester	72	70	97.22
	Sixth Semester	68	68	100
	Eighth Semester	91	91	100
2021-2022 Odd semester	First Semester			
	Third Semester	59	59	100
	Fifth Semester	72	72	100
	Seventh Semester	68	68	100

Department:

Faculty Development Program

Paper publications

S.No	Author	Title	Journal	National / International	Date
1	Dr. Thulasi Bai	Design of Multiband Array Antenna in MM-Wave for 5G Applications	Journal of Electrical Engineering	International	Oct 2021
2	Dr. Thulasi Bai	Investigation of brain computer interface for rich multimedia environment.	International Journal of Communication Systems	International	Sep 2021
3	Dr.Deepa Jose	Machine Learning Based and Reconfigurable Architecture with a Countermeasure for Side Channel Attacks	Inventive Communication and Computational Technologies: Proceedings of ICICCT 2021	International	Jan 2022
4	Dr.Deepa Jose	FPGA Implementation of Elliptic Curve Point Multiplication Over Galois Field	Mobile Radio Communications and 5G Networks (Book Chapter)	International	Jan 2022
6	Dr.Deepa Jose	Design and implementation of hybrid integration of cognitive learning and chaotic countermeasures for side channel attacks	Journal of Ambient Intelligence and Humanized Computing	International	May 2022

7	Dr.Deepa Jose	Battery energy storage systems (bess) state of the art	IOP Conference Series: Materials Science and Engineering	International	Feb 2022
8	Dr.Deepa Jose	Optimization with Different Parameters under Lockdown and unlockdown Periods for Forecasting and Prediction for Covid-19	Annals of the Romanian Society for Cell Biology	International	Apr 2022
9	Dr.Deepa Jose	Sizing of Wireless Networks with Sensors for Smart Houses with Coverage, Capacity, and Interference Restrictions	IoT and Analytics for Sensor Networks. Lecture Notes in Networks and Systems	International	Feb 2022
10	Dr. Jose Anand	SEC-UR-BIKE	International Journal of Mechanical Engineering	International	Sep 2021
11	Dr. Nirmala Devi K	PiBoT-A Programmable Robot	AIP Conference Proceedings	International	Mar 2022
12	Dr. Nirmala Devi K	Exam Assistant Robot	AIP Conference Proceedings	International	Mar 2022
11	Ms.Jaraline Kirubavathy	Voice controlled shopping trolley navigation with RFID scanner and live billing using IoT	Journal of Physics: Conference Series.	International	Oct 2022

Paper presentations

S.No	Presenter	Title	Conference	Organized by	Date
1	Dr. Thulasi Bai	Domestic Water Management Using Wireless Sensor Network	ICIECS 2021	RMK Engineering College	Dec 2021
2	Dr.Deepa Jose	Machine Learning Based and Reconfigurable Architecture with a Countermeasure for Side Channel Attacks	International Conference on Inventive Communication and Computational Technologies	Gnanamani College of Technology, Namakkal	Jan 2022
3	Dr.Deepa Jose	FPGA Implementation of Elliptic Curve Point Multiplication Over Galois Field	International Conference on Mobile Radio Communications and 5G Networks	University Institute of Engineering & Technology, Kurukshetra University, Haryana	Jan 2022
5	Dr. K. Nirmala Devi	Exam Assistant Robot	AICTE sponsored National Conference on Data Science and Intelligent Information Technology	National Engineering College. Kovilpatti	May 2021
6	Dr. K. Nirmala Devi	PIBOT - A Programmable Assistant	AICTE sponsored National Conference on Data Science and Intelligent Information Technology	National Engineering College. Kovilpatti	May 2021

7	Dr.Deepa Jose	Sizing of Wireless Networks with Sensors for Smart Houses with Coverage, Capacity, and Interference Restrictions	International Conference on Wireless Sensor Networks, Ubiquitous Computing and Applications 2021	GRIET, Hyderabad, India Hyderabad, India, February 26-27, 2021	Feb 2022
8	Dr. Clement Raj	Solar Charging case for Mobile Phones	ICIECS 2021	RMK Engineering College	May 2021
9	Ms.Jaraline Kirubavathy	Voice controlled shopping trolley navigation with RFID scanner and live billing using IoT	International Conference on Innovations in Electronics and Communication Systems	RMK College of Engineering and Technology	Aug 2021
10	Ms.Jaraline Kirubavathy	Domestic Water Management using Wireless Sensor Networks	International Conference on Innovations in Electronics and Communication Systems	RMK College of Engineering and Technology	Oct 2021
11	Ms.Jaraline Kirubavathy	Rainfall Prediction using Machine Learning Model	AICTE sponsored National Online Conference on Data Science and Intelligent Information Technology	National Engineering College. Kovilpatti	May 2021
12	Ms. Aida Jones	Lung Cancer Detection System using VGGNET 16 Architecture	ICIECS 2021	RMK Engineering College	May 2021

Faculty as Resource persons

S. No	Resource person	Role	Conference	Organized by	Date
1	Dr.Nirmala Devi . K	Session Chair	IEEE -International Conference on Simulation, Automation &Smart Manufacturing (SASM-2021)	IEEE Chapter-GLA University, Mathura, UP	21.8.21
2		Invited Resource Person	AICTE sponsored STTP on FPGA based Digital System Design with HDL (Phase V),	AICTE	1.7.21
3	Dr. Deepa Jose	Session Chair	International Conference on "Sustainable Materials and Technologies for Bio and Energy Applications (SMTBEA- 2021)	SSN College of Engineering and SSN Research Centre and Indian Science and Technology Association (Elavenil organization).	19.7.21
4	Dr. Deepa Jose	Reviewer	11th International Conference on Electronics, Communications and Networks	IOS	18.11.2021

5		Resource Person	2 Day Webinar on 'Optics & Photonics in Healthcare Sector'	IEEE Student Branch, Sahrdaya College of Engineering and Technology, Thrissur	08.09.2021 & 09.09.2021
	Dr.Uma Kumari C R	Resource Person	SignoX- A regional level Symposium : Talk on 'Level up Your Career with Optical Communication'	IEEE Student Branch, Jeppiar Engineering College, Chennai	18.11.2021
		Resource Person	Webinar on 'Multi-skilled Professionals-The Engineers'	Institute of Engineers, India(IEI) & SRM Institute of Science and Technology, Chennai	20.01.2022
		Jury	SignoX- A regional level Symposium : Project pitching event	IEEE Student Branch, Jeppiar Engineering College, Chennai	09.02.2022
6	Ms.B.Thyla	Reviewer	Internet of Things and Cyber-Physical Systems	Elsevier	12.4.22
7	B.Rammyaa	Reviewer	IJAIT	IIIT Nagpur	12.4.22
8	B.Rammyaa	Guest Speaker	Guest Lecture	Advancements in Wireless Communication	20.01.2022

Conferences attended by participants

S.No	Participant	Conference	Organized by	Date
1	Dr.Nirmala devi K - Resource Person	AICTE Sponsored STTP on FPGA based Digital System Design with HDL (Phase-II)	AICTE	23.2.21
2	Dr. Kavitha Balamurugan - Judge	Gyan Disha 2020 Project Expo	HITS Chennai	Jul 8 2022
3	Dr. Kavitha Balamurugan - Judge	Interdepartmental Paper Presentation	KCG College of Technology	Oct 10,2022
4	Dr. Deepa Jose - Resource Person	One Week Faculty Development Program on Research Writing	SRM University	22-04-21
5	Dr. Deepa Jose - Chief Guest	Chief Guest for Valedictory function of International Conference on Signal Processing, VLSI, Communication and Embedded Systems (ICSVCE)	Vardhaman College of Engineering, Hyderabad	29th and 30th April, 2021
6	Dr. Deepa Jose - Session Chair	International Conference on "Sustainable Materials and Technologies for Bio and Energy Applications (SMTBEA- 2021)	SSN College of Engineering and SSN Research Centre and Indian Science and Technology Association (Elavenil organization).	19th- 21st May 2021

7	Dr. Deepa Jose - Reviewer	11th International Conference on Electronics, Communications and Networks	IOS	November 18-21, 2021
8	Dr. Jose Anand - Session Chair	International Conference on Advances in Parallel Computing Technologies and Applications	Justice Basheer Ahmed Sayeed College for Women	15-16 April 2021
9	Dr. V. Thulasi Bai, Ms.K. Jaraline Kirubavathy - Resource Person	Virtual Seminar Meet	University of Bari Aldo Moro, Bari, Itali	26 March 2021
10	Dr.Uma Kumari C R - Resource Person	2 Day Webinar on 'Optics & Photonics in Healthcare Sector'	IEEE Student Branch, Sahrdaya College of Engineering and Technology, Thrissur	08.09.2021 & 09.09.2022

Patent details:

S.No	Inventor Name(s)	Title	Application No. & Patent Filed Date	Present Status
1.	Sadasivam s,rishwanth m.s. Sheik mohammed a.k. Sivakami b.	metamaterial antenna design	4/2022-co/l	copyrights published on 29/10/2021
2.	Nirmala Devi K Dhivya P Aishwarya Prakash S Divya J	Exam Assistant Robot	32219/2021-Co/L	Copyrights Published On 29/10/2021
3.	M Prathiba Deepa Jose R Saranya S Nandhini Devi	Automated Melanoma Recognition In Dermoscopy Images Via Very Deep Residual Networks	L-108770/2021	Copyrights Published On 29/10/2021
4.	Deepthi Ramesh Deepa Jose Keerthana R Krishnaveni V	Detection Of Pulmonary Nodules Using Thresholding And Fractal Analysis	L-108769/2021	Copyrights Published On 29/10/2021
5.	Thyla B	High Gain Planar Antenna For Wireless Communication In Industrial,Scientific And Medical (Ism) Band	202241005715	Complete Spec Filled On 2.2.22
6.	Deepa Jose Sanjay P S Praveen Kumar S	Iot Based Health Monitoring System	382643	Patent Granted On 25.11.21 Filled On 5.4.2022 Application No:201641011995
7.	Deepa Jose	An Artificial Intelligence Based System For Detection Of Covid Influence On Human Skin	2021102184	Australian Patent Granted On 16.6.21

8.	Rammyaa B Deepa Jose	An Automated Robotic Device For Attacking,Rescuing And Reconnaissance Operations	Application No.2021103286	Australian Patent Granted On 31st March 22
9.	Dr. Jose Anand (Associate Professor/Ece) M. Shobika (311018106051) Sneha T. (311018106052)	Programmable Stickers To Monitor Perishable Goods Using Blockchain	202241001932 & 13/01/2022	Australian Patent Granted On 26.9.21
10	1. Dr. Jose Anand - Associate Professor/Ece 2. Ashika R – 311018106004 3. Ilakya J - 311018106018 4. Menaka Pk - 311018106030	Cloud Based Parking Slot Alerting System Using Artificial Intelligence	202241001920 & 13/01/2022	Australian Patent Granted On 25.6.22
11	Dr.Deepa Jose Mr.I.Babu I.Maheswari	Chip Security Evaluation And Protection Device	202241001921 & 13/01/2022	Complete Spec Filled On 2.2.22
12	Kavithabalamurugan	Life Vehicle Communication Using Lifi	201741022947 &30/06/2017 Application Published On 04/01/2019 & Complete Spec Filed On 27/06/2018 , Form 18 Filled On 11/01/2021	Complete Spec Filled On 2.2.22

Achievements by students

S.No.	Achiever	Department / Year	Event	Date
3	Irene Michelle, Nithya T and Nandhine	ECE III year	Project Competition KCG College of Technology Ideathon	May 2022

4	Shobika, Sneha, Swetha.	ECE III year	Project Competition KCG College of Technology Ideathon	May 2022
5	Paarvathi.S, Preethi. S, Vinisha	ECE III year	Project Competition KCG College of Technology Ideathon	May 2022
6	Mahima Kumari, Aishwarya D , Chejrla Bramhani, Claudia Christy V J	ECE III year	Project Competition KCG College of Technology Ideathon	May 2022

MoU

Organization Name	Date of signing	Period
Capgemini Technology Services Indai Ltd.,	02.03.2022	2 Years
Lab to Market Innovations Pvt. Ltd.,	17.02.2022	3 Months
Honeywell in Partnership with ICT Academy	11.10.2021	3 Months
Tesla Minds, Chennai	01.04.2021	2 Years

Industrial visits/Internships

Industrial Visit:

Year	Name of Institution/ Organization	No.of students	Dates
IV Year	Kerala Electrical and Allied Engineering Co. Ltd.,	58	07.05.2022

Internships: Name of the Student with year	Name of Institution/ Organization	Duration
Monisha (PG Second Year)	IIITDM Kancheepuram	Jan 2021
Keerthana (UG Third Year)	IIITDM Kancheepuram	Dec 2021
Logeshwari (UG Third Year)	IIITDM Kancheepuram	Dec 2021
Krithika (UG Third Year)	IIITDM Kancheepuram	Dec 2021
Harish Chensuadar (UG Third Year)	IIITDM Kancheepuram	Dec 2021
Allwin (UG Third Year)	IIITDM Kancheepuram	Dec 2021
Ashwanthi (UG Third Year)	IIITDM Kancheepuram	Dec 2021
Ramya E. (UG Final Year)	University of Madras	Jan 2022
Shaul Hammed M. (UG Final Year)	University of Madras	Jan 2022
Lavanya Pillai (UG Final Year)	University of Madras	Jan 2022
Paveen K. (UG Final Year)	University of Madras	Jan 2022
Prasanth S. (UG Final Year)	University of Madras	Jan 2022
Priyanka (UG Final Year)	University of Madras	Jan 2022

21ST CENTURY MILLENIUM AWARD

Our Director and CEO Dr.Anand Jacob Verghese was awarded the 21st Century Millenium Award for his rich contribution to the field of Education by 21st Century Crane Summit, Taiwan and Bharath Cultural Centre, India.

CAMPUS BUZZ

Jan to June 2022

Inauguration of the Centre of Excellence in VLSI/FPGA/HW system Design

Center of Excellence (CoE) in VLSI / FPGA / HW Sytem Design

The inauguration of the Center of Excellence (CoE) in VLSI/ FPGA/ HW Sytem Design was held on 24th March 2022. The Chief Guest Mr. K. Harish Kumar, Vice President, Capgemini Technology Services, inaugurated the CoE and also addressed the staff and students of the Department of Electronics & Communication Engineering, sharing valuable insights on how to secure and flourish in a career in core engineering

Project Expo 2022

Project Expo 2022

Department of ECE and IETE Student Forum of KCG Tech organized a Project Expo 2022 on 15th June 2022. Final year Students of ECE Department presented their projects to the jury members who evaluated, encouraged and shared their feedback to the presenters. The winners were:

- **First Prize :** Smart Crop Production System using Machine Learning Techniques - Aishwarya D, Bramhani C, Mahima Kumari of ECE.
- **Second Prize :** Programmable Stickers to Monitor Perishable Goods using Block Chain - Shobika M & Snekha T of ECE.
- **Third Prize :** Flood Alert System using Crowdsocucing - Paveen K, Prashanth S, Priyanka K of ECE.

IDEATHON 22

IDEATHON '22

Centre for Transformational Leadership (CTL) conducted Ideathon exclusively for the First year Students on 14th May 2022. The teams presented their innovative ideas under five domains: Green Technology, Assistive Technology, Pervasive Computing, Smart Automation and Future Aviation/Space exploration. Mr Hariharan V, Founder and CEO of Space Zee Technology Pvt. Ltd and alumnus of KCG College of Technology, was the external judge. Dr Lakshmipathy, Asst Prof. and Coordinator of KCG TBI and Mr Venkatraman, Asst Prof. Department of Aeronautical Engineering were the internal judges.

IIOT AIR MONITORING SYSTEM	JENNIFER V	BE ECE
	HARISH ARAVINDH S	BE ECE
	ASHWINKUMAR S	BE ECE
	NAVEEN G	BE ECE

INNOCON 22

Student affairs conducted INNOCON 22 -Building a culture of innovation focusing on green technology

INNOCON '22

The Office of Student affairs conducted "INNOCON '22" - Building a culture of Innovation, focusing on Green Technology, Assistive Technology, Smart Automation, Space Exploration & Pervasive computing on 14th May 2022 with a 16 member Jury team from several well renowned companies.

Theme	Prize	Team members	DEPT	Project Title
Smart Automation	I	Vishaal R, Vignesh S R, Jagadish J S	III Mechatronics	Automatic ABO blood group analyzer using Machine learning model
	II	Diya Agarwal D, Sriram R, Vaishnavi.D	III EEE	Hello finder
	II	Doreen Belinta A, Kavya T, Kavipriya M	III ECE	AEGISTEC - Mother's Care Shield
Green Technology	I	Radha Prabhakaran, Preethi S, Paarvathi S	III ECE	IOT based crop protection
	II	Manoj Kumar S, Sai Sanjay G S, Ritheeshwaran S, Vignesh S	III Auto	Design and fabrication of thermoelectric cooler using peltier device
	II	Raghul S, ThirumalaiSrinivasan, Karthigeyan P	III Fashion Technology	Sustainable approach towards shoe manufacturing
Assistive Technology	I	Abbeerwani, Priyanka M, Suhail Khan	III ECE	Retinal fundus image detection using AI
	II	Manjusri M, Divyashree, Gowri	III Fashion Technology	Standardisation of saree size (readymade)
	III	Logeshwari M, Krithikaa I, Keerthana S	III ECE	Thermo electric self heating shoes