

**DR. T. THIMMAIAH INSTITUTE OF
TECHNOLOGY**
**DEPT. OF ELECTRONICS AND
COMMUNICATION ENGINEERING**

**ECE
SPECTRUM**



VOLUME-1, ISSUE-1
ACADEMIC YEAR 2020-2021





Dr.T. THIMMAIAH INSTITUTE OF TECHNOLOGY

(Estd. 1986) Oorgaum, Kolar Gold Fields, Karnataka – 563120
(Affiliated to VTU, Belgaum, Approved by AICTE - New Delhi)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

SPECTRUM 2020-21



Principal's Message

Dear Readers,

I am delighted to welcome you to the First issue of “Spectrum” student’s Technical Magazine, a technical publication that showcases the latest developments and innovations in Electronics & Communication Engineering. I would like to congratulate and appreciate the efforts of Prof. Vijaya Bharathi M, Head of the Department, and her editorial team for this magazine. They have done a commendable job in bringing out this issue, which features articles on topics for the overall development for the student’s fraternity. The magazine also highlights some of the achievements and activities of our students, faculty and industry partners of Electronics & Communication Engineering Department. I hope you enjoy reading this magazine and find it informative and inspiring. I urge you to keep learning and exploring new horizons in your field. Electronics & Communication Engineers are well-positioned in using technology to solve crucial engineering issues and improve the living conditions of the modern world making things more efficient. Hence, a great opportunity to make a positive impact on the society and environment.

Dr. Syed Ariff Principal

Dr. T. Thimmaiah Institute of Technology, KGF



From the Editor's Desk

Dear Readers,

I am delighted to welcome you to the First Issue of "Spectrum" Technical Magazine, a student-led publication that showcases the latest developments in Electronics & Communication field. This magazine is a platform for our students, faculty and industry partners to share their insights, experiences and achievements in Electronics & Communication Engineering. In this issue, you will find articles on topics such as Technical publications, students and faculty achievements. You will also learn about some of the exciting projects and activities that our department is involved in, student competitions, and outreach programs. I would like to thank the editorial team for their hard work and dedication in preparing this magazine. I would also like to thank all the authors who contributed their valuable content to this issue. Without their efforts, this magazine would not have been possible. I hope you enjoy reading this magazine and find it informative and inspiring. I look forward to hearing your feedback and suggestions for future issues. Together, we can make this magazine a success and a source of pride for our department and our profession.

Sincerely,

Prof. Vijaya Bharathi.M

Head, Department of Electronics & Communication Engineering

EDITORIAL COMMITTEE

Chief-Editors:



Prof. Vijaya Bharathi M
HOD ECE Associate Professor,



Dr. Jenitha A
Associate Professor, IQAC Head

Associate Editor:



Prof. Mohana C
Asst. Professor

STUDENTS EDITORIAL



Lavanya S
1GV18EC015



Shirisha S P
(1GV18EC032)



Sakthi Ragavan
(1GV19EC037)



Divya Swetha J
(1GV19EC010)

DR. T. THIMMAIAH INSTITUTE OF TECHNOLOGY

VISION

To produce technically competent engineers having innovative skills positive attitude, leadership and professional ethics, with a focus on developing sustainable and new technology.

MISSION

- Create a conducive environment for teaching, learning and innovation by providing state of the art infrastructure.
- Learn sustainable and new technologies through industry institute collaborations.
- Produce technically competent engineers with ethics, discipline and social consciousness through holistic education.

DEPARTMENT OF ELECTRONICS & COMMUNICATION

VISION

“Graduates to be recognized in the field of Electronics & Communication Engineering ensuring academic excellence with innovative technical skills and professional ethics.”

MISSION

To achieve the vision, the department will

1. Imparting quality technical education through innovative teaching learning process.
2. Active association with industry to meet the growing challenges in the society.
3. Develop overall competency with professional ethics by providing training programs.

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ECE NEWS19

STUDENTS ACTIVITIES AND THEIR ACHIEVEMENTS

1. Students of the department participated in online webinars





Sample certificates of participation

2 . Final year and pre-final year students participated in conference held on 19-20th July 2021.



Certificate of participation



Certificate of Best Paper Award

3. Final year and pre-final year students participated in project expo held on 04th august 2021.



Certificate of participation

INTERNSHIP ACTIVITIES

- Preethi T. of 6th Semester, has attended 30 days Internship on “Internet of Things” conducted by PIE INFO Communication Pvt Ltd and completed the project of “Design, Simulation and Implementation of Arduino Based Automatic Water Level Controller with LCD Display” from 29/08/2020 to 28/09/2020.
- Lavanya S. of 4th Semester, has completed the 4-weeks Internship/training on “Internet of Things (IoT)” organized by IETE in association with Industry Experts during January 13, 2020 to February 7, 2020 at IETE, Bengaluru

- Suveditta B. of 6th Semester, has completed 4 weeks Internship on “Machine Learning” in September 2020.

ECE FORUM ACTIVITIES IN ASSOCIATION WITH IETE

1. The department conducted various activities under ECE Forum in association with IETE on behalf of IETE Students Forum (ISF) day celebration on 27-01-2021 and competitions like singing, mehendi and pencil sketching were organised at the department level and prize winners were distributed with cash prize and certificates and even the Faculty Coordinators and judges of the event were distributed with the certificates from IETE.

Sl. No.	Name of the event	1 st Prize	2 nd Prize	3 rd Prize
1	Singing	Dhivya Priya G R (1GV19EC009)	Bhavana (1GV20EC005)	Sujitha S (1GV19EC045)
2	Mehandi	Farheen Taj (1GV19EC012)	Rithika Srijai (1GV20EC028)	Akshaya (1GV19EC002)
3	Pencil Sketching	Tabrej Ahmed (1GV19EC058)	Syed Afrid (1GV20EC038)	Lohith K R (1GV20EC017)

HOD Prof. Vijaya Bharathi M coordinated the event along with faculties coordinators for the events are Dr. T. Bhuvanendiran , Mrs. Inbalatha K, Mr. Srinivas Babu N, Mr, Shashi Kiran S, Mrs. Kanimozhi S, Ms Mohana C, Mrs Nandini G N

DEPARTMENT STUDENTS EVENTS UNDER ECE FORUM

1. Technical writing-08-05-2021.

Topic: Does modern technology help to improve the educational process.

2. Technical treasure Hunt-22-05-2021

3. Technical short films-12-06-2021.

4. Cultural activities-26-06-2021

5. Skit-24-07-2021

PLACEMENT DETAILS

Sl. No	Name	USN	Department	Company	Placed year
1	TABBASSUM F	1GV17EC044	ECE	AltioStar	2021
2	PRIYANKA S	1GV17EC029	ECE	Capgemini	2021
3	SPANDANA	1GV17EC042	ECE	Capgemini	2021
4	BHARATH BV	1GV17EC003	ECE	Cognizant	2021
5	PAWAN	1GV17EC022	ECE	Cognizant	2021
6	RAKSHITHA SA	1GV17EC033	ECE	Debater Talent Intact	2021
7	SAJJAD AHMED A	1GV17EC036	ECE	Elcamino Software Pvt Ltd	2021
8	KAVYA H.N	1GV16EC019	ECE	HTC GLOBAL SERVICE	2021
9	DINESH KUMAR R	1GV17EC015	ECE	IBM	2021
10	MOHAN BABU M	1GV17EC019	ECE	Intertrustviteos Corporate and Fund Services Private Limited	2021
11	BHARATH K	1GV17EC004	ECE	Klok systems India Pvt Ltd	2021
12	SNEHA M	1GV17EC041	ECE	Klok systems India Pvt Ltd	2021
13	VENKATESH A	1GV17EC051	ECE	Klok systems India Pvt Ltd	2021
14	LAVANYA S	1GV17EC035	ECE	LiDO Quality Tutorials Pvt Ltd	2021
15	CHAITHRA	1GV17EC006	ECE	Mphasis	2021
16	MOHAMMED SHOAIB	1GV17EC018	ECE	NTT DATA	2021
17	TEJAS M	1GV17EC045	ECE	Radical Minds	2021
18	PRACHI BOHRA V	1GV17EC049	ECE	Seventh Sense	2021
19	UMERA PRAVEEN	1GV17EC048	ECE	SKYONN	2021
20	KESHUMURTHY N	1GV17EC014	ECE	Tantragyaan	2021
21	DIVYA K K	1GV17EC009	ECE	TATA Consultancy Services	2021
22	SINDHU G	1GV17EC039	ECE	TATA Consultancy Services	2021
23	CHANDRAKALA	1GV17EC057	ECE	VERZEO	2021
24	VINUTHA	1GV17EC053	ECE	VERZEO	2021
25	NAGESH BV	1GV17EC020	ECE	VIRTUSA	2021
26	PREETHI T	1GV17EC026	ECE	WIPRO	2021
27	SAJJAD AHMED A	1GV17EC036	ECE	TECH MAHINDRA	2021
28	KANIMOZHI S	1GV17EC013	ECE	Aricent Technology(capgemini)	2021

DEPARTMENT ACTIVITIES

1. The department organized Three Days FDP on the title on “Applications of SCILAB in DSP and Digital Communication” from 16.8.2020 & 18.08.2020. The Resource Person for the event was Mr.Senthil Kumar, Asst Professor, Institute of Road & Transport Technology, Erode



Inauguration of the FDP

2. Online Webinar on “Career Options and Opportunities for Electronics Graduates” was organized on 09.10.2020. The Resource Person for the event was Mr. Renjith.C.V, Electrical Architect/Product Designer, Philips India LTD.

3. Guest lecture was delivered on the title “Idea Pitching” was delivered by Mr. Nehru Babu A., General Manager, Plant Maintenance BEML Ltd. K G F for Final Year Students on 19.12.2020.



Guest lecture on the title “Idea Pitching”

4. Received an approval from VTU for establishing a Research Centre in the department.
5. The project of final year approved for KSCST student project programme-44th series.



Karnataka State Council for Science and Technology
 (An autonomous organisation under the Dept. of Science & Technology, Govt. of Karnataka)
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Mr. H. Hemanth Kumar
 Executive Secretary

22nd April 2021

Ref: 7.1.01/SPP/10

The Principal
 Dr. T. Thimmaiah Institute of Technology
 Dr. T. Thimmaiah Road Oorgaam Band Line Colony
 Nethaji Nagar Kolar Gold Fields
 Karnataka - 563 120

Dear Sir/Madam,

Sub : Sanction of Student Project - 44th Series: Year 2020-2021
 Your Project Proposal Reference No. : **44S_BE_2954**
 Ref : Your Project Proposal entitled " **AN EFFICIENT IOT BASED COVID-19 MONITORING SYSTEM USING CNN CLASSIFIER**

We are pleased to inform that your student project proposal referred above, has been approved by the Council under "Student Project Programme - 44th Series" with a budgetary break-up as detailed below:

Student / s	Ms. Priyanka.D Ms. Priyanka.S Ms. Chandrakala.V Ms. Vinutha.S	Budget	
		Particulars	Amount (Rs.)
Guide/s	Mrs. Kanimozhi.S	Materials/Consumables	4,500.00
		Labour	-
Department	Electronics And Communication Engineering	Travel	-
		Miscellaneous	-
		Report	500.00
		Total	5,000.00
FIVE THOUSAND RUPEES ONLY			

Sl. No.	Students Name	Guide Name
1	Ms.Priyanka.D	Mrs.Kanimozhi .S
2	Ms.Priyanka.S	
3	Ms. Chandrakala.V	
4	Ms. Vinutha.S	

TECHNICAL PUBLICATIONS BY THE FACULTIES AND STUDENTS

1. Mrs. Vijaya Bharathi M. HOD, and Mrs. Vijaya Geetha R. Associate Prof., published the paper on the title "Printed Circuit Board Defect Detection using Mathematical Expression in Image Processing" in Advances in Mathematics: Scientific Journal.

2. Mrs. Vijaya Bharathi M. HOD, published the paper on the title “OTA Based 2nd Order Butterworth Filter For Mobile Communication using CMOS Technology” in Advances in Mathematics: Scientific Journal.
3. Mrs. Jenitha A. Associate Prof. and Ms. Tamilvani R. Asst. Prof. Published a paper on the title “Design and Implementation of Low Power Digital Up Counter for digital Beamforming” IJRAET <https://doi.org/10.46564/ijraet.2020.v08i08.006>.
4. Mrs. Vijaya Geetha R. Associate Prof. published a paper on the title “A Feature Based Change Detection Approach using multi-scale orientation for Multi-temporal SAR Images” in European Journal of Remote Sensing, Taylor & Francis, ISSN 2279-7254, 10.1080/22797254.
5. Mrs. Jenitha A. Associate Prof. and Ms. Tamilvani R. Asst. Prof. published a paper on the title “Design and Implementation of Low Power Digital Up Counter for digital Beam forming” IJRAET <https://doi.org/10.46564/ijraet.2020.v08i08.006>
6. Mrs. Vijaya Geetha R. Associate Prof. published a paper on the title “A Feature Based Change Detection approach using multi-scale orientation for multi-temporal SAR images” in European Journal of Remote Sensing, Taylor & Francis, ISSN 2279-7254,
7. Akshayakumar M. Dinesh N. Krishna G. Katwa and Sunil Kumar R. presented and published the paper on the title “Design of WSN Node for Forest Trees against Poaching Using IoT” under the guidance of Dr. K. M. Palaniswamy Professor, In IJRAET Volume 8 issue 10.
8. Shambhavi, Soumya C. Sushmitha Ganig M. and Yeshwitha J. presented and published the paper on the title “A Disaster Monitoring Technique of: Iceberg Movement Detection using Active Sensor Images” under the guidance of Mrs. R. Vijaya Geetha Associate Prof. in IJRAET Volume 8 issue 10
9. Rithick G, Sai Sushanth L. Sagar A. N and Santosh Kumar P. presented and published the paper on the title “Eco-Friendly and Self Powered IOT Using Piezoelectric Energy Harvesting” under the guidance of Mr. Rajesh kumar Kaushal, Asst. Prof. in IJRAET Volume 8 issue 10

10. C.R. Gayathri, C.P. Priyanka, G.M Ramya and K. Sanjay presented and published the paper on the title “Detection of Micro Aneurysms in Retinal Images using Machine Learning Techniques” under the guidance of Mrs. Devika S. Asst. Prof., In IJRAET Volume 8 Issue 8
11. Dinesh Spicer Sham S, Sindhu Kavi A.G, Sinija S. and Sonali Sanjana S presented and published the paper on the title “Lane Detection for Self-Driving Cars Using Deep Neural Networks” under the guidance of Mr. Srinivas Babu N. Asst. Prof. and Mr. Jesudas J. Asst. Prof. Volume 8 issue 9
12. Keerthi G. Kanchana K. Sumaiya Fathima and Shalini R presented the and published paper on the title “Heart Disease Prediction Using Intelligent Based Machine Learning System” under the guidance of Mr. Shashi Kiran S. Asst. Prof. and Dr. Bhuvanendhiran T. Associate Prof. In IJRAET Volume 8 Issue 9
13. Kavitha S. B. Keerthana P. and Meena R. presented and published the paper on the title “A Stratified approach to detach Rain and Blizzard in a Color Image” under the guidance of Mrs. Manjushree K. Chavan Asst. Prof. in IJRAET Volume 8 Issue 8
14. K. Nithya, G. Pavithra and K. Shikha of final year presented and published the paper on the title “Perceptual Image Hashing based on Texture and Color” under the guidance of Ms. Tamilvani R. Asst. Prof., Ms. Mohana C. Asst. Prof. and Mrs. Kanimozhi S Asst. Prof. in IJRAET Volume 8 Issue 9.

QUIZ CONDUCTED BY THE DEPARTMENT

1. National level E-Quiz contest on “Computer Networks” was conducted from 27/06/2020 to 3/07/2020 by Mrs. Jenitha A. Associate Prof. Mr. Shashikiran S. Asst. Prof. and Ms. Devika S. Asst. Prof.
2. National level E-Quiz contest on “Signals & Systems and Image processing” was conducted from 03/07/2020 to 06/07/2020 Prof. Ruckmani Divakaran, Dean Academics, Mrs. Jenitha A. Associate Prof. and Dr. T. Bhuvanendhiran Associate Prof.
3. National level E-Quiz contest on “ITC and Communication Systems” was conducted from 27/06/2020 to 3/07/2020 by Mrs. Jenitha A. Associate Prof. Mrs. Manjushree K Chavan Asst. Prof. and Ms. Tamil Vani R. Asst. Prof.

4. National level E-Quiz contest on “Network Theory and Microwaves” was conducted from 29/06/2020 to 02/07/2020 by Prof. C. Ruckmani Divakaran Dean Academics, Mrs. Vijaya Bharathi M. HOD and Ms. Mohana C Asst. Prof.
5. National level E-Quiz contest on “Embedded Systems and Microcontroller was conducted from 01/07/2020 to 04/07/2020 by Dr. K.M. Palaniswamy Professor., Mrs. Vijaya Geetha R. Associate Prof. and Mrs. Nandini GN Asst. Prof.
6. National level E-Quiz contest on “DSD, HDL and VLSI” was conducted from 01/07/2020 to 07/07/2020 by Prof. Ruckmani Divakaran Dean Academics, Mr. Srinivas Babu N Asst. Prof. and Ms. Tamil Vani R. Asst. Prof.
7. National level E-Quiz contest on “Electronic circuits and Power Electronics” was conducted from 03/07/2020 to 06/07/2020 Dr. K M. Palaniswamy Professor. Mr. Rajesh Kumar Kaushal Asst. Prof. and Mr. Jesudas J. Asst. Prof.

OUTREACH PROGRAMS



**Developing and Managing
Efficient Garbage Disposable
System**



ECE NEWS

Source: The business
research company

**Electronics Industry Analysis Shows a
Slow Recovery of the Global Electronics
Market from the Pandemic Effect.**

PROGRAM EDUCATIONAL OBJECTIVES(PEOs) & PROGRAM SPECIFIC OUTCOMES (PSOs)

PEO1: Develop the engineering design, problem solving skills and aptitude for innovations in multi-disciplinary areas.

PEO2: Manage resources skillfully as members and leaders to solve complicated real world problems.

PEO3: Be receptive to new technologies and attain professional competence through lifelong learning with Advanced degrees and other Professional Activities.

PSO1: Apply the principles of Electronics in the field of VLSI and Embedded systems.

PSO2: Apply the domain knowledge to design, analyze and develop optimal solutions in the field of Signal Processing and Communication with social concern.

PSO3: Utilize acquired technical knowledge in Applied Electronics and multidisciplinary domains

PROGRAM OUTCOMES (POs)

At the end of the B.E program, students are expected to have developed the following outcomes:
Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems.

1. Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: 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.
4. Conduct investigations of complex problems: 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.
5. Modern Tool Usage: 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.
6. The Engineer and Society: 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.
7. Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: 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.
11. Project Management and Finance: 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.
12. Life-long learning: 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.



IF ANY SUGGESTIONS CONTACT US

HOD.ECE@DRTTIT.EDU.IN