

**DR. T. THIMMAIAH INSTITUTE OF
TECHNOLOGY**

**DEPT. OF ELECTRONICS AND
COMMUNICATION ENGINEERING**

**ECE
SPECTRUM**



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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 2021-22



Principal's Message

Dear Readers,

I am delighted to welcome you to the second issue of “Spectrum” student’s Technical Magazine, a technical publication that showcases the latest developments 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. They have done a commendable job in bringing out this issue, which features articles on topics for the overall development for the student’s and faculty members. The magazine also highlights some of the achievements and activities of our students, faculty, Alumni and industry partners of Electronics & Communication Engineering field. I hope you this magazine will be informative and inspiring. Electronics & Communication Engineers are well-positioned in using technology to solve crucial engineering issues and improve the living conditions of the modern world. 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 Second Issue of "Spectrum" Technical Magazine, a student-led publication that showcases the latest developments and innovations in Electronics & Communication field. This magazine is a platform for our students, faculty, alumni 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, student's participation in sports and cultural events. You will also learn about some of the exciting projects and activities that the department is involved in, student competitions, and outreach programs and alumni events. 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. Vijayabharathi M
Associate Professor (HOD ECE)



Dr. Jenitha A
Associate Professor

Associate Editor:



Prof. Mohana C
Asst. Professor

STUDENTS EDITORIAL COMMITTEE



Sakthi Ragavan
(1GV19EC037)



Divya Swetha J
(1GV19EC010)



Deepika J
(1GV20EC008)



Sanjay S
(1GV20EC030)

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.

CONTENTS

**STUDENTS ACTIVITIES & THEIR
ACHIVEMENTS7**

DEPARTMENT ACTIVITIES.....13

**FACULTY ACHIVEMENTS
.....14**

**TECHNICAL PUBLICATIONS BY THE
STUDENTS AND FACULTIES.....14**

**OUTREACH PROGRAMS BY THE
STUDENTS.....18**

ECE NEWS.....19

STUDENTS ACTIVITIES AND THEIR ACHIEVEMENTS

1. Mr Harsha S attended a webinar on "Constitution of India" organised by Dr. TTIT, KGF on 12-12-2021.
2. Mr Harsha S attended a webinar on "IP Awareness/Training program" organised under National Intellectual Property Awareness Mission on 25-01-2022.
3. Mr Harsha S attended a webinar on "Virtual Session on Achieving Problem Solution Fit & Product-Market fit" organised by the department of civil Engineering in association with Institution's Innovation council(IIC), Dr. TTIT, KGF, on 31-01-2022.
4. Mr Harsha S attended a webinar on "Virtual Session on Entrepreneurship skill, Attitude and Behaviour Development" organised by the Entrepreneurship Development cell (EDC)in association with Institution's Innovation council(IIC), Dr. TTIT, KGF, on 25-02-2022.
5. Mr Harsha S attended a webinar on "Virtual Session on Acceleration/Incubation Opportunities for students & Faculties-Early-stage Entrepreneurs" organised by the Entrepreneurship Development cell(EDC) in association with Institution's Innovation council(IIC), Dr. TTIT, KGF, on 07-07-2022.
6. Mr Harsha S attended the online course on "Python for Beginners" Organised by Sololearn Issued on 14-01-2022.
7. Ms. Fiza, ECE has participated in the “Virtual Session on Achieving Problem-Solution Fit & Product -Market fit” organized by the department of Civil Engineering in association with Institution’s Innovation Council (IIC), Dr. TTIT, KGF. Held on 31st January 2022.
8. Divya Priya GR has successfully completed the Online National Level Techno Quiz with 72%,conducted on the account of National Technology Day organized by the Institution’s Innovation Council (IIC), Dr. TTIT, KGF. Held from 11th - 13th May 2022.
9. Mr Naveen kumar. N has participated in the one day Webinar on “Technology Beyond LTE” on Saturday 18th June 2022, organized by Department of Electronics & Communication Engineering.
10. Dheeraj.S Attended a webinar on ‘Introduction to GIS’ by Civil Engineering, Dr. TTIT KGF, in Dr. TTIT Lecture Series on 8th June 2021.

11. Mr.DHEERAJ.S attended a webinar on ‘Institution’s Innovation Council - An Overview Dr. TTIT KGF, in Dr. TTIT Lecture Series on 9th June 2021.
12. Mr.DHEERAJ.S attended a webinar on ‘Introduction to DevOps’ Dr. TTIT KGF, in Dr. TTIT Lecture Series on 10th June 2021.
13. Mr.DHEERAJ.S attended a webinar on ‘Design of Battery powered Bicycle ‘by Department of Electrical & Electronics Engineering, Dr. TTIT KGF, in Dr.TTIT Lecture Series on 11th June 2021.
14. Mr.DHEERAJ.S has participated in the webinar titled “Early-Stage Entrepreneurs - Startup and Related Ecosystem” organized by Dr. T. Thimmaiah Research & Innovation Council in association with Institution’s Innovation Council, Dr TTIT, K.G.F held on 14th June 2021.
15. Mr. DHEERAJ.S attended a webinar on ‘Pre - Stressed Concrete Structures’ Dr. TTIT KGF, in Dr. TTIT Lecture Series on 15th June 2021.
16. Mr. DHEERAJ.S of attended a webinar on ‘How to manage files and folders in Google Drive’, Dr. TTIT KGF, in Dr. TTIT Lecture Series on 16th June 2021.
17. Mr.DHEERAJS attended a webinar on ‘Features and Significance of Server-Side Programs’ Dr. TTIT KGF, in Dr. TTIT Lecture Series on 17th June 2021.
18. Mr. DHEERAJ.S attended a webinar on ‘Machine Learning Algorithms - A Brief Approach’ by Dr. TTIT KGF, in Dr. TTIT Lecture Series on 19th June 2021.
19. Mr. DHEERAJ. S attended a webinar on ‘Mental health and well-being’ in Dr. TTIT Lecture Series on 21st June 2021.
20. Mr. DHEERAJ. S attended a webinar on ‘Enhancement of Qualitative Interactive Classroom Activities’,Dr. TTIT KGF, in Dr. TTIT Lecture Series on 23rd June 2021.
21. Mr.DHEERAJ.S attended a webinar on ‘Black Fungus’ Dr. TTIT KGF, in Dr. TTIT Lecture Series on 25th June 2021.
22. MR. DHEERAJ.S of B.E (ECE) has participated in the E-Quiz Competition conducted by ECO Club of Madurai Sivakasi Nadars Pioneer Meenakshi Women’s College, Poovanthi on 05.06.2021 as part of the celebration of World Environment Day.
23. A team of ECE students, Irene Megha Joseph, Subitha Infancia. A, Joshua A S, , Elizabeth Rani, , Nikitha. G, and Mridhula. M along with other department students Participated in the 21st VTU Youth Festival 2022 - Prathibhotsava at BMS College of Engineering, Bangalore from 29th to 31st July 2022. Dr. TTIT’s Golden Valley Choir

members took part in the group song event while others participated in events like group dance, cartooning, elocution, debate, solo singing, collage etc. Dr.Bhuvanendhiran T, Convenor, Dr.TTIT Cultural Committee, Coordinated and accompanied.



Department participants of 21st VTU Youth Festival 2022.

26. ‘Vigilance Awareness Week 2021’ was celebrated by Bharath Earth Movers Limited (BEML), **KGF** in which various competitions were conducted for the students of KGF on 29.10.21 Students Tabrez and Hari Shakthi, ECE and Swaroop Rani, Civil took part in extempore competition and Swaroop Rani, Civil, Adarsh, EEE, Tabrez Ahmed, EC and Harishakthi, ECE participated in Debate Competition. Among the 70 other students of various other colleges



Tabrez Ahmed, ECE won the 3rd Prize in Extempore and Debate competitions .The event was coordinated by Dr. Bhuvanendhiran T, Assoc. Prof., ECE.

EVENTS CONDUCTED UNDER EC-GOLDEN ANWESHA STUDENTS FORUM

Sl No.	Event Name	1 st Prize	2 nd Prize
1	Pick and Speak	Divya Swetha J (1GV19EC010)	Nomeshwar (1GV19EC029)
2	Technical quiz	Lavanya S (1GV18EC015)	Dharshini S (1GV18EC007)
3	Pencil Sketching	Rithika Srija S (1GV20EC014)	Kauyashree M (1GV20EC014)
4	Vegetable carving	Umashree V (1GV18EC039)	Tabraz Ahmed (1GV19EC058)
5	Solo singing	Divya Priya G R (1GV19EC009)	Bhavana G (1GV20EC005)
6	Solo dance	Jayashanavi U (1GV19EC015)	Rufina R F (1GV20EC027)
7	Project expo	Nomeshwar (1GV19EC029) Bharath Kumar (1GV19EC005) Mohammed Irfan (1GV19EC024)	----- ...

"Technical and Cultural Hackathon" under ECE Forum in association with IETE Bengaluru students Chapter -30-10-2021



Dr. T. Thimmaiah Institute of Technology
 Oorgaam, Kolar Gold Fields, Karnataka - 563120
 Approved by AICTE, Affiliated to VTU, Belgaum



IETE Bengaluru Chapter Sponsored
 Foundation Day(07.11.2021)
 InterDepartmental Programme
“ Technical & Cultural Hackathon ”
 On 30.10.2021, 10.00AM onwards
 organized by
 Dept of Electronics and Communication Engineering &
 Dept of Electrical and Electronics Engineering



Club Of Events

- Photography(Technical)
- Pencil Sketching(Technical)
- Extempore(Technical)
- Vegetable Carving
- Solo Singing
- Solo Dance

Coordinator
 Prof.M Vijaya bharathi,
 HOD/ECE
 Co Coordinator
 Dr.K.LakshmiPathy,
 HOD/EEE



Details of the events conducted

Sl. No.	Name of The Event	Judges
1	Solo Singing	Mrs. Manjushree K Chavan , Mr. Srinivas Babu N
2.	Solo Dance	Mrs. Inbalatha K, Ms. Daphny Shallet
3.	Photography	Mr. Ronald Lawrence , Mr. Shashi Kiran S
4.	Pencil Sketch	Mr. Bhuvanendran T, Mrs. Jillian Rufus
5.	Extempore	Mrs. Vijaya Geetha , Mrs. Subhashini
6.	Vegetable Carving	Mrs. Vijaya Bharathi M, Mr. Somashekar

Winners Details of the Events

Sl. No.	Name of The Event	Winner details
1	Solo Singing
2.	Solo Dance	Jaishnavi
3.	Photography	Sindhuja Vishva D
4.	Pencil Sketch	Syed Afrid V Nomeswar
5.	Extempore	Tabrez Ahmed
6.	Vegetable Carving	Sindhuja

PLACEMENT DETAILS

Sl No	Name	USN	Department	Company
1	AJAZ AHMED I	1GV18EC002	ECE	TATA Consultancy Services
2	LAVANYA S	1GV18EC015	ECE	TATA Consultancy Services
3	SHIRISHA	1GV18EC032	ECE	Capgemini
4	MAHESH	1GV19EC405	ECE	Klok System
5	DHARSHINI	1GV18EC007	ECE	Klok System
6	PRATHIBA	1GV18EC026	ECE	22/7
7	TANUSHA	1GV18EC032	ECE	22/7
8	DEERAJ S	1GV18EC008	ECE	Elcamino
9	RAKESH	1GV18EC029	ECE	Pinclick
10	SHRUTHI R	1GV18EC034	ECE	Upskills
11	BHAVYA M V	1GV19EC401	ECE	Upskills
12	CETHAN C N	1GV19EC402	ECE	Upskills
13	KIRTHISH KUMAR	1GV18EC014	ECE	Wistron
14	USHA DEVI	1GV18EC040	ECE	Micro Land
15	CHAITHRA H	1GV17EC018	ECE	TeleIndia
16	KEZIA	1GV18EC013	ECE	Wistron
17	DHEERAJ	1GV18EC008	ECE	Wistron

DEPARTMENT ACTIVITIES

WORKSHOP ORGANISED

1. The department organized 5 days workshop on “IoT: Connecting Things, ML & its Applications, and Documentation using Latex” the presenters for the workshop were Dr. Jenitha A, Prof. Vijaya Geetha R , Prof. Rajesh Kumar Kaushal, Prof. Srinivas Babu N and Prof. Shashi kiran S, the event was conducted from 19 to 23-Apr-22.



IOT: Connecting Things, ML & its Applications and Documentation using Latex.

INDUSTRIAL VISIT

1. Defense Exhibition was organized by the BEML from 12/12/2021 to 13/12/2021 where 3rd, 5th & 7th Semester students visited the exhibition along with the faculty members.



BEML Visit during Defence Exhibition

ALUMNI DETAILS

1. **Career Counseling by Alumni:** Mr.Revansidda & Ms.Sneha S (2017 batch Alumni) Counseled 6thsem students for career opportunities in **VLSI**.



Mr.Revansidda & Ms. Sneha S (2017 batch Alumni) counselling the students

FACULTY ACHIEVEMENTS

1. **Dr K M Palaniswamy** Professor, has presented a webinar on “Evolution of 5G” at Dr. TTIT Lecture Series webinar on 12th June 2021.
2. **Dr K M Palaniswamy** Professor, Head IQAC Team, has organized National Level webinar on “How to write a Quality Paper & publish it in Index Journal” On 29.05.2021.
3. **Dr K M Palaniswamy** Professor has organized United Nation’s International Yoga Day Online Programme “Yoga for well-being” On 21.06.2021, 10.00AM by Mr.Deshpande,Yoga Master, St. Joseph High School(Retired),7th Cross Road, Robertsonpet, KGF and Mrs.Girija, Yoga master, Vivekananda High School, KGF.
4. **Dr. Jenitha A** Published Chapter in Book Chapter 2, Print ISBN: 978-93-91312-98-5, eBook ISBN: 978-93-91312-99-2 Title: Recent Advancement on Design and Implementation of Low Power Digital up Counter for Digital Beamforming DOI: 10.9734/bpi/naer/v6/11075D.

TECHNICAL PUBLICATIONS BY FACULTIES AND STUDENTS

1. Manivannan.S, Reena Shree.R, Suchitra.G, Devaiyani,Published a paper on the title “**Deep learning for Recognizing Human Activities using Motion of Sketal Joints**” under the guidance of Prof. Ruckmani Divakaranand Prof Nandini G N in Vidhya bharthi International Interdisciplinary Research Journal . ISSN: 2319-4979, Page No.-350-357.

2. Bharath J, Chandana G, Kavya HN, Shubha M, Published a paper on the title **“Face Detection and Recognition for Automatic Attendance system using Artificial Intelligence for Real Time Application”** under the guidance of Dr. KM Palaniswamy and Prof. Jesudas J in Vidhya bharthi International Interdisciplinary Research Journal, ISSN: 2319-4979, Page No.-299-307

3. Sindhu G, Spandana K N , V. Prachi Bohra, Wajiha Sultana Published a paper on the title **“VLSI Implementation of Turbo Codes For LTE Systems”** under the guidance of Prof. VijayaBharathi M. in Vidhya bharthi International Interdisciplinary Research Journal. ISSN: 2319-4979,Page No.-375-379

4. Divya K K, Revansidda, Sneha M, Yashaswini G Published a paper on the title **“Defective Coffee Bean Inspection With GA Based GAN Optimizer Using Tensor Flow”** under the guidance of Dr.Jenitha A in Vidhya bharthi International Interdisciplinary Research Journal. ISSN: 2319-4979,Page No.-329-335

5. Divya K K, Revansidda, Sneha M, Yashaswini G Published a paper on the title **“IoT Based Home Automation Controlled Using Sensors and Mobile Application ”** under the guidance of Dr.Jenitha A in Vidhyabharthi International Interdisciplinary Research Journal. ISSN: 2319-4979,Page No.-324-328

6. Dr. Jenitha A and Ms.Tamilvani R published a paper on the title **Comprehensive Study And Design of Rectangular and Triangular Microstrip Patch Single and 4*1 Array Antennas ”** in Vidhyabharthi International Interdisciplinary Research Journal. . ISSN: 2319-4979,Page No.-288-291

7. Chaithra R, Kanimozhi S, Keshumurthy N, Tejas M Published a paper on the title **“Printed Circuit Board Fault Detection Using Image Processing In Matlab ”** Under the guidance of Prof. Vijaya Geetha R, in Vidhya bharthi International Interdisciplinary Research Journal. ISSN: 2319-4979, Page No.-380-386

8. Lavanya.S, Venila.B.N, Felsy Florance .W, Ishwarya.R Published a paper on the title **“Depression Detection From Social Network Data using Machine Learning Techniques ”** Under the guidance of Dr. Bhuvanendhiran.T, in Vidhya bharthi International Interdisciplinary Research Journal. ISSN: 2319-4979,Page No.-316-323
9. Bharath BV, K Dollar Singh , Nagesh BV, Rahul Balu kanbarkar Published a paper on the title **“Convolution Neural Network For Human Activity Recognition In Videos: Littering Activity Detection”** Under the guidance of Prof. Rajesh Kumar Kaushal, in Vidhya bharthi International Interdisciplinary Research Journal. ISSN: 2319-4979, Page No.-358-362.
10. Priyanka D, Priyanka S, Vinutha S, Chandrakala V Published a paper on the title **“An Efficient IoT based Covid-19 Monitoring System Using CNN Classifier ”** Under the guidance of Prof. Jesudas J in Vidhya bharthi International Interdisciplinary Research Journal. ISSN: 2319-4979,Page No.-336-341.
11. Bharath K, Hari Prashanth , Vignesh K , Rakshitha S Published a paper on the title **“Fire detection using surveillance camera by deep learning techniques”** Under the guidance of Prof. Srinivas Babu N in Vidhya bharthi International Interdisciplinary Research Journal. ISSN: 2319-4979, Page No.-363-368.
- 12.Lavanya.S, Venila.B.N, Felsy Florance .W, Ishwarya.R Published a paper on the title **“Depression Detection From Social Network Data using Machine Learning Techniques ”**Under the guidance of Dr. Bhuvanendhiran.T, in Vidhya bharthi International Interdisciplinary Research Journal. ISSN: 2319-4979, Page No.-316-323.
- 13..Bharath BV, K Dollar Singh , Nagesh BV, Rahul Balu kanbarkar Published a paper on the title **“Convolution Neural Network For Human Activity Recognition In Videos: Littering Activity Detection”** Under the guidance of Prof. Rajesh Kumar Kaushal, in Vidhya bharthi International Interdisciplinary Research Journal. ISSN: 2319-4979, Page No.-358-362.

14. PriyankaD, Priyanka S, Vinutha S, Chandrakala V Published a paper on the title “**An Efficient IoT Based Covid-19 Monitoring System Using CNN Classifier**” under the guidance of Prof. Jesudas J in Vidhya bharthi International Interdisciplinary Research Journal. ISSN: 2319-4979, Page No.-336-341.

OUTREACH PROGRAMS BY THE STUDENTS



“Developing Sustainable Water Management System”

“Helping Local Schools to Achieve Good Results and Enhance Their Enrollment in Higher Education”



ECE NEWS

SOURCE: THE TIMES OF INDIA

“In semiconductor value chain, India has a footprint in several critical steps, like IP, design solutions and services , (ODM)/board and systems manufacturing” etc., with this India can become semiconductor nation, says Intel top executive Randhir Thakur, president Intel Foundry Services, at the Semicon India Conference in Bengaluru on 30/4/2022

Global group to invest \$3bn in Mysuru chip plant May 2, 2022.

**SOURCE: THE HINDU
BUSINESS LINE**

Lam Research opens new Centre for Engineering in Bengaluru-2022

PROGRAM EDUCATIONAL OBJECTIVES(PEOs)

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.

PROGRAM SPECIFIC OUTCOMES (PSOs)

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

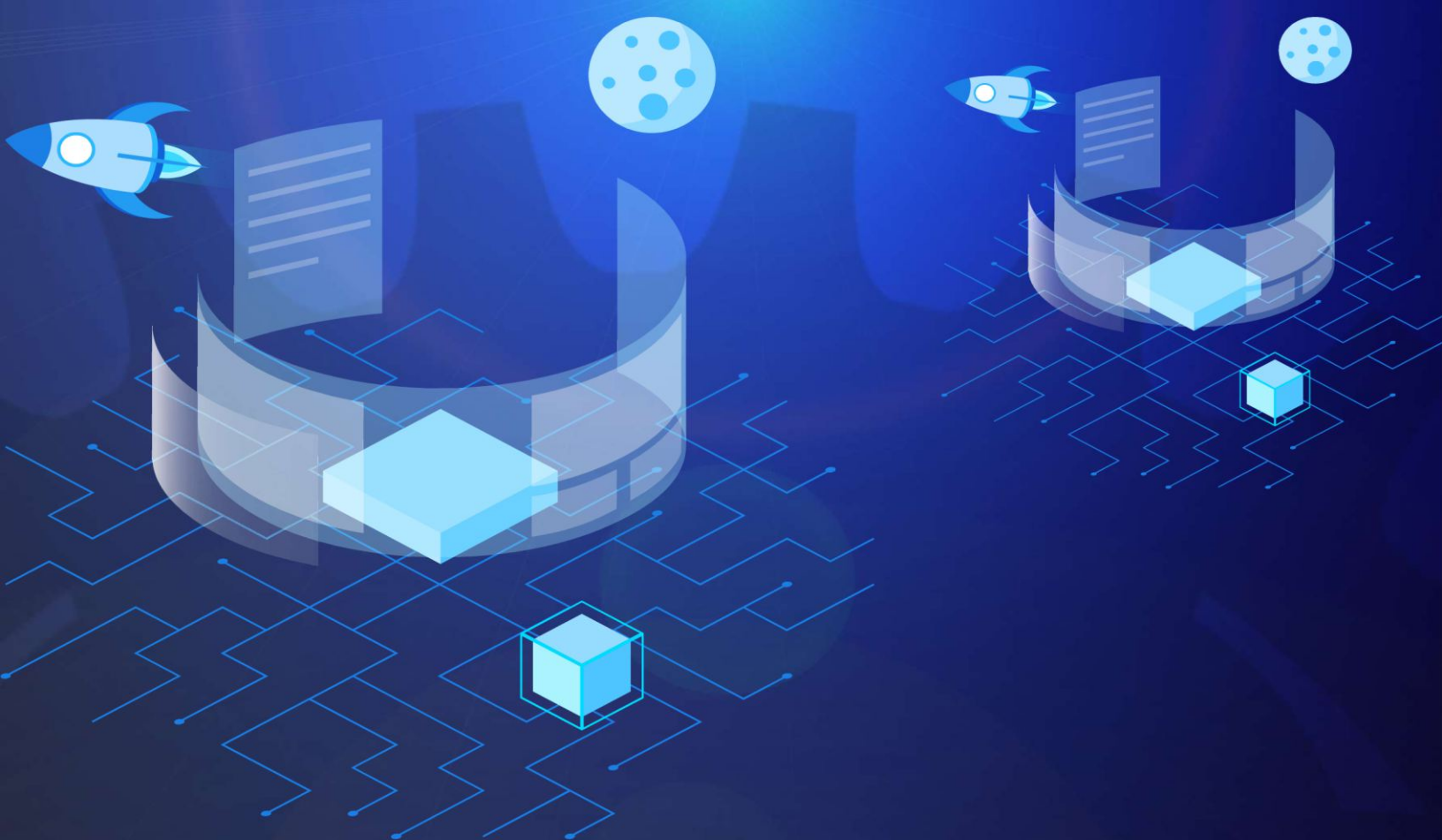
PSO2: Apply the domain knowledge to design, analyze and develop optimal solutions in the field of Signal Processing and Communication with social concern.

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