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ELECTRONICS & COMMUNICATION ENGINEERING

ElectroVerse

Department Magazine - 2022

2021-22

Contents

Message from Principal

It gives me immense joy to see the Department of Electronics and Communication Engineering publish its magazine for the academic year 2021–22. More than just a compilation of articles and images, this magazine is a reflection of the department's creativity, innovation, and teamwork.

It showcases the accomplishments of our students and faculty—their participation in technical, cultural, and academic activities, as well as project work and creative pursuits. It serves as a platform for students to express themselves beyond the classroom.

In a rapidly evolving field like Electronics and Communication, with advances in AI, IoT, and 5G, our students play a vital role in shaping the future. I am pleased to see the department fostering an environment of learning, research, and holistic development.

I congratulate the Head of the Department, faculty, editorial team, and students for their efforts and wish the ECE team continued success in all future endeavors.

Regards

Dr. L Basavaraj

Principal, ATMECE

Message from HoD

I am delighted to present the 2021–22 edition of our department magazine. At ECE, we emphasize academic excellence along with innovation, skill development, and creative expression. This magazine reflects our collective spirit.

It features technical articles, project work, achievements, and creative contributions by students and faculty, highlighting how we've grown together as a team. Such platforms help students think beyond textbooks and build confidence in their ideas.

I sincerely thank the editorial team, faculty coordinators, and all contributors for their dedication. Let us continue working together to make our department more innovative and student-centered.

Sincerely

Dr. Mahesh P K

HOD, ECE

Message from the Editor

Dear Readers,

It is my pleasure to present the ECE Department Magazine for the academic year 2021–22. This magazine is the outcome of dedicated efforts, creativity, and collaboration by our enthusiastic students and supportive faculty.

Through its pages, we aim to showcase the dynamic academic and co-curricular life of the department. From technical achievements and workshops to cultural events and project highlights, this edition captures the vibrant energy of our ECE community. You'll also find a blend of creative expressions—articles, poems, and thoughts—that reflect the diverse talents of our students.

As the editor, I take great pride in how this magazine has come together. It not only reflects individual growth but also the shared spirit and unity within the department. Platforms like these encourage students to go beyond academics, express themselves freely, and build confidence.

I extend heartfelt thanks to our HoD, faculty members, editorial team, and all student contributors for making this edition meaningful. We hope you enjoy reading it and feel inspired to be part of future editions.

Your feedback and suggestions are always welcome!

Sincerely,
Mr. Chandra Shekar P
Editor – Department Magazine
ECE, ATMECE

Editorial Committee

About the Department

The Department of Electronics and Communication Engineering (ECE) at ATME College of Engineering is committed to developing competent, industry-ready professionals in the dynamic and fast-growing domain of electronics and communication.

The department offers a Bachelor of Engineering (B.E.) program with a strong focus on core areas such as analog and digital electronics, signal processing, communication systems, embedded systems, VLSI design, and microcontrollers. The curriculum integrates theoretical knowledge with practical application, supported by state-of-the-art laboratories and project-based learning.

Our experienced and dedicated faculty members play a vital role in mentoring students, nurturing innovation, and encouraging research and development activities. The department fosters a learning environment that emphasizes critical thinking, creativity, collaboration, and problem-solving.

To complement academic learning, the department organizes a variety of enrichment activities, including expert lectures, workshops, industrial visits, and student development programs. Students are also actively encouraged to engage in internships, hackathons, technical contests, and mini-projects to gain real-world exposure.

With a balanced focus on technical excellence, practical skills, and professional ethics, the ECE department aims to empower students to pursue successful careers in industry, research, or entrepreneurship, while contributing meaningfully to technological advancement and society.

Vision of the department

To develop highly skilled and globally competent professionals in the field of Electronics and Communication Engineering to meet industrial and social requirements with ethical responsibility.

Mission of the department

- To provide State-of-art technical education in Electronics and Communication at undergraduate and post-graduate levels, to meet the needs of the profession and society and achieve excellence in teaching-learning and research.
- To develop talented and committed human resource, by providing an opportunity for innovation, creativity and entrepreneurial leadership with high standards of professional ethics, transparency and accountability.
- To function collaboratively with technical Institutes/Universities/Industries, offer opportunities for interaction among faculty-students and promote networking with alumni, industries and other stake-holders.

Staff Achievements

- Harshitha N from department of ECE won the BEST FEMAL FACULTY player of the championship in MITM Engineers premier league-2021
- Mr. Chandra Shekar P participated and completed successfully AICTE Training and Learning (ATAL) Academy Online Elementary FDP on “Artificial Intelligence in Electronic Design Automation” from 09/08/2021 to 13/08/2021 at GITAM Deemed to be University.
- Chandra Shekar P participated & completed successfully AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "Quantum Computing Algorithms and Machine Learning" from 02-08-2021 to 06-08-2021 at R V College of Engineering.

Sl. No.	Name of Faculty (Principal Investigator)	Name of the Funding Agency	Title of the Project	Sanctioned order no.	Sanctioned date	Amount Sanctioned
1	Dr. Yathisha L & Mr. Guruprasad K N	Department of Science & Technology	Sci Fest	DST/CO/A/FP/E91/2021	28.09.2021	Rs.17,90,800/-
2	Dr. Mahesh P K & Dr. Yathisha L	Modernization and removal of obsolescence Aspirational (MODROB-ASP) By AICTE, NewDelhi.	Enhancing New Technology in Microwave and Wireless Communication	9-90/IDC/MOD-ASP/policy-1/2021-22	25.10.2021	Rs.10,77,000/-
3	Dr. Bhagyashree S R & Dr. Prathiba MK	AICTE,New Delhi	Implementation of National Education Policy (NEP)-2020	2-23/AICTE/ATAL-HQ/2021-22/2101	29.12.2021	Rs.94,000/-

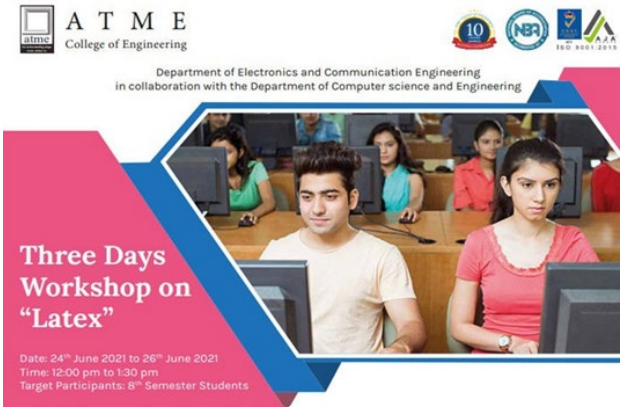
List of FDPs/STTP/Workshops

Sl. No	Name of the Faculty	Details of Courses attended (Title of the Course, Organizer Name and Place)	Starting Date	End Date	Duration
1	Mr. Pradeep Kumar Y Mrs. Keerthi A Kumbar	AICTE Training and Learning (ATAL) Academy Online Ele-mentary Faculty Development Program on "Data Science"" at J C Bose University of Science & Technology, YMCA, Farida-bad .	21/02/2022	25/02/2022	5 Days
2	Mr. Guruprasad K N	AICTE Training and Learning (ATAL) Academy Online Ele-mentary FDP on "Innovative Technical Educational Practices and Academic Leadership" organized by Shri Shankaracharya Technical Campus, Bhilai	07/02/2022	11/02/2022	5 Days
3	Mrs. Chethana K S	Online course on "Adversarial Signal Processing and Machine learning with applications to multimedia forensics"	14/02/2022	18/02/2022	5 Days
4	Mr.Manjunath K Mrs. Harshitha N Mrs. Pavithra A C	One Week Online STTP/Refresher Program on Project Based Learning" organized by Department of E&TC, AISSMS COE Pune in association with BoS (E&TC) SPPU & ISTE New Delhi	21/02/2022	26/02/2022	5 days
5	Mr. Pradeep Kumar Y Mr. Guruprasad K N Mrs. Juslin F Ms. Anupama Shetter Mrs. Keerthi A Kumbar	FDP - Recent Trends in Deep Learning, G H Raison college of Engi-neering, Nagpur(Online)	01/07/2022	07/07/2022	7 Days
6	Mr. Chandra Shekar P	Computational Neuroscience a MOOC from the University of Wash-ington and offered through Coursera	13/06/2022	29/07/2022	8 Weeks
7	Mr. Chandra Shekar P	AICTE Training And Learning (ATAL) Academy Online Elementary FDP On "Robot Operating System (Ros)" At GSSS Institute Of Engineering And Technology For Women	10/01/2022	14/01/2022	5 Days
8	Ms. Anupama Shetter Mr. Guruprasad K N Mr. Pradeep Kumar Y Mrs. Juslin F	NITTT- Module 4 – Instructional Planning and Delivery	Throughout the Semester		
9	Ms. Anupama Shetter Mrs. Keerthi A Kumbar Mr. Guruprasad K N Mr. Pradeep Kumar Y Mrs. Juslin F	NITTT- Module 5 – technology Enabled Learning & Life-Long Self Learning			
10	Ms. Anupama Shetter Mrs. Keerthi A Kumbar Mr. Guruprasad K N Mr. Pradeep Kumar Y Mrs. Juslin F	NITTT- Module 6—Student Assessment and Evaluation			

11	Ms. Anupama Shetter Mrs. Keerthi A Kumbar Mr. Guru Prasad K N Mr. Pradeep Kumar Y Mrs. Juslin F Mrs. Shalini VS	NITTT- Module 2-Professional Ethics & Sus-tainable Development & Module-3 Communica-tion Skills, Modes and Knowledge Dissemina-tion			
12	Ms. Anupama Shetter	One Week Industrial Training at Renalyx Health Systems Pvt. Ltd Bengaluru	27-09-2021	1-10-2021	5 Day
13	Ms. Anupama Shetter Mrs. Keerthi A Kumbar Mr. Guru Prasad K N Mr. Pradeep Kumar Y	FDP on Deep Learning & Applications (Parallel Architectures) organized by IITG	23-8-2021	3-9-2021	2 weeks
14	Mr. Girish M Mr. Manjunath K Ms. Anupama Shetter Mrs. Harshitha N	ONLINE Workshop on NAAC, Jharkhand Govt Tool Room, Ranchi	13/12/2021	18/12/2021	6 Day
15	Mr. Chandra Shekar P	One Week AICTE – VTU Joint Training Pro-gramme for Teachers on “An Overview of Teach-ing Techniques in Innovation & Design Think-ing” Organized by VTU Human Resource Devel-opment Centre (VTU -HRDC), Centre for PG Studies, VIAT, Muddenahalli, Chikkaballapur (Dist.) - 562101.	06/12/2021	10/12/2021	5 days
16	Dr. S R Bhagyashree	Completed SWAYAM`s “Basic course in Bio Medical Research” during 2020-21.	2021		

Department Activities

- The department organized Talk on “Career Opportunities in the IC Design Industry” and organized webinars on different areas to enhance and ignite the knowledge.
- The topics are “Teaching Pedagogy”, “Challenges & Opportunities in Higher Education”, “Machine Learning and Deep Learning”, “Antennas and electromagnetic hazards”, “Career Opportunities in Digital Marketing”, “Advances in AI, ML, DL & Robotics – From the Industrial point of view starting from macro to the nano stage”, “AI and its Application”, “World of AI, Yesterday, Today and Tomorrow” and "How to become Network Engineer” are the Webinar/Seminar/technical Talk conducted or organized by department.
- Department has arranged Industrial Visit for 7 th Sem students on 18/12/2021 to BEML, Mysuru.
- The Department organized Five days National level Workshop on “Academic and Research Writing”, 3days’ workshop on LATEX and 2 days Skill enrichment program on “Introduction to Swift Programming Language”



- Department organized a “Intellectual Property Rights” for all the Research Scholars and Faculty of various Engineering College on 04/07/2022 at ATMECE, Mysuru.
- Department organized a ATAL FDP on “Implementation of national Education Policy 2020” for the faculty members of LL Engineering College from 24/01/2022 to 28/01/2022 at ATMECE, Mysuru.

List of Patents

Sl. No	Patent Application No.	Inventors	Date of Filing	Invention Title
1	202141045358	Prof. Pavithra A C Ms. Kalpana K Ms. Dhanusha T Ms. Chandu D Ms. Bhavana D C	6/10/2021	Enhanced System And Method For Accident Prevention In Under-Ground Collieries
2	202141045359	Prof. Pradeep Kumar Y Mr. Mohammed Moin Ms. Kripa Goyal Ms. Rumana A Mr. Ranjan R	6/10/2021	Energy Efficient Robotic Sanitizing Device
3	202141045360	Prof. Pavithra A Mr. Likith Maney Ms. Poorvashree C V Mr. Karthik A H	6/10/2021	Automated Voice Controlled Robot Device
4	202141045361	Dr. Prathibha M K Ms. Bhoomika G Ms. K Gowthami	6/10/2021	An Eye Movement Based Communication Device

Students Activities/Achievements

- Mr. Fawaz Ahmed Khan and Mr. Nagraj S has participated in the Hardware and Software edition of Smart India Hackathon 2022 Senior grand finale at nodal center - B. S. Abdur Rahman Crescent Institute of Science & Technology, Chennai, Tamil Nadu Under the mentorship of Dr. Bhgyashree S R.

- 21st VTU YOUTH FESTIVAL, "PRATHIBHOTSAVA – 2022" was organized by BMS College of Engineering, Bengaluru various Cultural and literary event was Scheduled from 29th – 31st July 2022. The following are the students who participated in events as below

- Niranjan N from 2nd Year Electronics and Communication Department represented the event and performed song from "Perfect", "Titanic" and "Fifa".

- Niranjan N, Abhishek M from 2nd Year Electronics & Communication and Ponnanna C P, Nikhil H N from 2 nd Year Electrical & Electronics department participated in group singing and sung one song from Hindi "Ondhe Matharam" and another song from kannada "Gudugudiya".

- Chethan Kumar M C of 2nd year Electronics and Communication Department had participated in the event spot photography.

Grants Received for Student

Sl. No	Name of the Project	Name of the students	Name of the Guide	Amount Sanctioned in Rs.	Name of the Funding Agency
1	Predicting the crop based on soil parameter by using Machine Learning Techniques	Chethan P (4AD18EC014) Dhanush H V (4AD18EC018) Mahadev Deeapk P (4AD18EC030) Nikhith Urs (4AD18EC040)	Dr. Bhagyashree S R Mrs. Pavithra A C	5000/-	Visvesvaraya Technological University (VTU)
2	Wearable Tech Gloves for Speech Impaired	Sheetal K Athreya (4AD18EC057) Mansoor Fathak (4AD18EC031) Riyanka K (4AD18EC051) Sara Simran (4AD18EC055)	Dr. Mahesh P K	5000/-	Visvesvaraya Technological University (VTU)
3	Development of an Autonomous Wall Painting Mobile Robot Using Raspberry Pi	Nagashree.M (4AD18EC034) Sowjanya (4AD18EC060) Thejaswini.K (4AD18EC068) Uday Gowda H C (4AD18EC070)	Dr. Yathisha L Ms. Anupama Shetter	6000/-	Karnataka State Council for Science and Technology (KSCST)

Awards

Sl. No	Team Members	Mentor Name	Title of the Project	Awards/ Prize
1	Sheetha K Athreya Riyanka K Sara Simran Mansoor Fathak	Dr. Mahesh P. K.	Wearable Tech Gloves for Speech Impaired	₹ 5,000.00
2	Dhanush H V Chethan P NikhithI Urs Maahadev Deepak	Dr. Bhagyashree S R	Improving The Yield of The Crops by Analyzing the Soil Parameters and Growth of The Plants by Using Machine Learning Techniques	₹ 5,000.00
3	Thejaswini.K Nagashree.M Sowjanya Uday Gowda H C	Dr. Yathisha L Ms. Anupama Shetter	Development Of an Autono-mous Wall Painting Mobile Ro-Bot Using Raspberry Pi	₹ 6,000.00

Placement Achievements

In Electronics and Communication Engineering, 64 students go placed to various companies in the AY 2021-22 with package 2.4L – 5L. The Companies like Upskillz, HTC Global Solutions, TCS, Capgemini Technology Services India, Wipro, Career Labs, Mindtree, NTT Data Global Delivery Services Private Limited, Infosys, Brigosha Technologies, Mycaptain, Iopex Technologies, Sasken Technologies, Frenustech Private Limited, Aey Solutions, ECL finance Limited, Acadecraft Pvt. Ltd. With various Designations as Business development, Project Engineer, Research Associate, Software Engineer, Software Developer, Associate, Associate Software Engineer, Assistant System Engineer, Trainee Business Operation Executive, Design Engineer, Trainee—NPI & Engineering, System Engineer, Trainee Engineer, Information Technology Senior Associate.

Toppers

Name of the Student	USN	CGPA	PHOTO
SHEETAL K ATHREYA	4AD18EC057	9.61	
NANDITHA A	4AD18EC035	9.10	

Articles

5G and Beyond: Shaping the Future of Wireless Communication

The world of wireless communication is evolving faster than ever. With the rollout of **5G**, we are entering a new era of ultra-fast, low-latency, and highly connected networks that are transforming the way we live, work, and interact with technology.

Unlike previous generations, **5G** is not just about faster internet—it's about enabling entirely new applications. From **autonomous vehicles** and **remote healthcare** to **smart cities** and **industrial automation**, 5G provides the foundation for innovations that demand real-time communication and massive device connectivity. Technologies like **massive MIMO**, **beamforming**, and use of **millimeter wave spectrum** make 5G more efficient, reliable, and scalable.

But the story doesn't end here.

While 5G is still being adopted, researchers and engineers are already preparing for the **sixth generation—6G**. Expected by **2030**, 6G aims to achieve **speeds over 1 terabit per second**, **ultra-low latency in microseconds**, and fully integrate **AI-driven networking**, **terahertz frequencies**, and **intelligent edge computing**. It will enable futuristic applications such as **holographic communication**, **brain-computer interfaces**, and **immersive extended reality (XR)**.

Countries like the US, China, South Korea, and Japan are already investing in 6G research. For students and professionals in **Electronics and Communication Engineering**, this means exciting opportunities in **VLSI, embedded systems, antenna design, signal processing**, and **network security**.

As we stand at the edge of this technological revolution, the shift from 5G to 6G will not just change communication—it will redefine how humans and machines interact. The future is wireless, intelligent, and interconnected. It's time to be ready.

Nijagunaswamy
3rd Year

ಜ್ಞಾನ ಜ್ಯೋತಿ

ಜ್ಞಾನವೆಂಬ ದೀಪವನ್ನು,
ಹತ್ತಿಸುತ್ತೇವೆ ಪ್ರತಿದಿನವೂ,
ಅವನತಿಯೇ ಇಲ್ಲವೇನು,
ಇದು ಎಂಜಿನಿಯರಿಂಗ್ ಪಥವದು!

ಪಾಠಗಳು ಕಠಿಣವಿರಲಿ,
ಪ್ರಯತ್ನಗಳು ನಿತ್ಯ ಹೊಸದು,
ಕಾಲೇಜ್ ಜೀವನದ ಸಾಗರದಲ್ಲಿ,
ಜೀವನಕ್ಕೆ ದಾರಿ ಹಚ್ಚುವುದು.

ತಂತ್ರಜ್ಞಾನ ತಾರಕ

ವಿದ್ಯುತ್ ರೇಖೆಗಳ ನಡುವೆ,
ವಿದ್ಯಾರ್ಥಿಗಳ ಕನಸು ಬೆಳೆದಿತ್ತು,
ಚಿಪ್, ಕೋಡ್, ಸಿಗ್ನಲ್ ಜೊತೆಗೆ,
ಹೊಸ ಭವಿಷ್ಯ ನಮಗೆ ಹೊತ್ತಿತ್ತು.

ವಿದ್ಯೆ ಕಲಿತ ವಿದ್ಯಮಾನವಿದು,
ಹೊಸ ಯುಗದ ಆರಂಭವಿದು,
ಇದು ತಂತ್ರಜ್ಞಾನ ತಾರಕವಾಗು,
ನಮ್ಮ ನವ ಭಾರತದ ಬೆಳಕು.

ವಿದ್ಯಾರ್ಥಿಯ ಪಥ

ಪರೀಕ್ಷೆಯ ಒತ್ತಡ, ಪ್ರಾಜೆಕ್ಟ್‌ಗಳ ಹಂಗಾಮ,
ಅದೆಲ್ಲವನ್ನೂ ನಗೆಯಲಿ ಕಳಿಯೋಣ,
ಊರ ಜ್ಞಾನ, ದೂರದ ಕನಸು,
ಇವುವೆ ನಮ್ಮ ಬದುಕಿನ ಮೌಲ್ಯಗಳು.

ಗುರುಗಳ ನೆರಳು, ಸ್ನೇಹಿತರ ಬೆಂಬಲ,
ಪಾಠಗಳಿಂದ ಜೀವನದ ಪಾಠ,
ಇಂದಿನ ವಿದ್ಯಾರ್ಥಿ ನಾಳೆಯ ನಾಯಕ,
ಇದು ನಮ್ಮ ಧೈರ್ಯದ ಪಥ!

Monisha M
4th Year

Program Outcomes

- **PO1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- **PO2. Problem analysis:** Identity, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- **PO3. 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.
- **PO4. 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.
- **PO5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- **PO6. 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.
- **PO7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **PO8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **PO9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- **PO10. 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.
- **PO11. 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.
- **PO12. 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.

Program Educational Objectives

- **PEO1:** To produce graduates to excel in the profession, higher education and pursue research exercises in Electronics and Communication Engineering.
- **PEO2:** To create technically able alumni with the capacity to examine, plan, to create and execute Electronics and Communication frameworks thereby involving in deep routed learning.

Program Specific Outcome

- **PSO1:** To Comprehend the Fundamental ideas in Electronics and communication Engineering and Apply them to identify, formulate and effectively solve Societal engineering problems using latest tools and techniques.
- **PSO2:** To work effectively in a group as an independent visionary, team member and leader having the ability to understand the requirements and develop feasible solutions to emerge as potential entrepreneurs.

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