MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

ECE-DEPARTMENT
NEWS LETTER/MAGAZINE

ELECTRO PULSE

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Mr. Marri Laxman Reddy - Chairman

"The pride of every student and staff would be in his/her college. A college reach heights of glory but without materials like college magazine the outside world may not know of it. The role of a college magazine is to promoting what an institute offers. It brings out into the open things which are unrevealed. It brings to light the names of the unsung heroes and their mighty deeds. I am happy that there is a dedicated team of staff and students who have brought out the magazine of our college. They have presented the stupendous achievements of Marri Laxman Reddy Institute of Technology and Management, in the fields of academics, research, sports and extra circular activities, in a nice way. Dazzle represents the collective work of team. I wish the magazine a grand success".

Dr. P. Sridhar Ph.D, M. Tech, MISTE **- Director**

"It is a great pleasure to see a creative expressions of students who had contributed to Electro Pulse, MLRITM has grown abundantly in the recent past. It continues to sustain its growth. People reading this magazine will realize the tremendous changes that are happening in the MLRITM campus. The magazine is presenting a glimpse of the growth of the institution on many fronts. The college has been simply unstoppable in its progress as it has been actively involved in various activities that have brought to light the hidden talents of the college students and staff. The highly qualified and dedicated members of staff have always stood shoulder with the management and have carried out their duties with a level of commitment. This magazine has recorded achievements of staff members and students. I wish the management, staff and students of the college success in their future endeavours".

Dr. R. Murali Prasad Ph. D, M. TECH, MISTE – **Principal**

"It gives me immense pleasure to extend my best wishes to the Department for maintaining the technical Magazine-Electro Pulse, which serves as a platform for students and faculty to showcase their innovative ideas, research contributions, and technical expertise. In today's rapidly evolving technological landscape, staying updated with emerging trends is crucial, and this magazine will foster knowledge-sharing and creativity among budding engineers. I encourage students to actively participate, explore new concepts, and contribute towards advancements in their respective fields. May this initiative continue to inspire and empower young minds for a brighter future".

Dr. N. Srinivas Ph. D, MIEEE, FIETE, LISTE – **HOD-ECE**

"I am happy to learn that MLRITM College of Engineering is coming out with the half yearly college magazine. Efforts such as this will provide an opportunity for the staff and students to participate in technical events, industrial visits, seminars, workshops, sports etc. Such value additions are very much essential for the young technocrats, engineers and scientists, to demonstrate their ideas for a developed India. I sincerely appreciate and congratulate the chairman, Principal, the editorial team and the entire management of the college for their unrelenting efforts in compiling this magazine".

Vision of the Institute

To be a globally recognized institution that fosters innovation, excellence, and leadership in education, research, and technology development, empowering students to create sustainable solutions for the advancement of society.

Mission of the Institute

To foster a transformative learning environment that empowers students to excel in engineering, innovation, and leadership.
To produce skilled, ethical, and socially responsible engineers who contribute to sustainable technological advancements and address global challenges.
To shape future leaders through cutting-edge research, industry collaboration, and community engagement.

Quality Policy

- Ensure excellence in education through innovative teaching and continuous improvement.
- Promote ethical, skilled, and employable graduates who drive sustainable technologies.
- Encourage research, industry collaboration, and community engagement for societal benefit.

Vision of the Department

To provide quality technical education in Electronics and Communication Engineering through research, innovation, striving for global recognition in specified domain, leadership, and sustainable societal solutions.

Mission of the Department

- **DM1:** To create a transformative learning environment that empowers students in electronics and communication engineering, fostering excellence in technical skills and leadership.
- **DM2:** To drive innovation through research, deliver a transformative education grounded in ethical principles, and nurture the development of professionals
- **DM3:** To cultivate strong industry partnerships, and engaging actively with the community for societal and technological progress.

Program Educational Objectives (PEO) for the UG Program

PEO 1: Have successful careers in Industry.

PEO 2: Show excellence in higher studies/ Research.

PEO 3: Show good competency towards Entrepreneurship.

Program Outcomes (POs) for the UG Program

Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze 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 modeling 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**: Underst and the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and 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 underst and ing 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.

Program Specific Outcomes (PSOs) for the UG Program

1. Professional Skills: An ability to analyze and design analog & digital systems for a given specification and function.
2. Problem-solving and Applications Skills: An ability to solve and implement functional blocks of hardware-software co-designs problems for VLSI, signal processing and communication applications.
3. Successful Career: Gain the hands-on competency skills in Computing Tools for electronics and communication systems for the entry level position to meet the requirements of the Employer.

Program Educational Objectives (PEOs) for the PG program

PEO1: To achieve professional success in the embedded systems domains by applying technical knowledge in academic, industry and entrepreneurial roles.

PEO2: To excel in research and innovation through deep understanding of industrial needs and emerging technologies for developing real-world solutions.

PEO3: To improve knowledge and skills for career growth by upholding integrity and embracing lifelong learning globally.

PEO4: To exhibit leadership, professionalism, and communication skills in multidisciplinary towards the sustainable development.

Program Outcomes (POs) for the PG program

1. **Research / Investigation:** An ability to independently carry out research /investigation and development work to solve practical problems.
2. **Report Preparation:** An ability to write and present a substantial technical report/document
3. **Domain Mastery (Embedded Systems):** Students should be able to demonstrate a degree of mastery in Embedded Systems
4. **Application of Engineering Principle:** Acquire and apply engineering principles to design embedded systems and processes that address complex real-world problems.
5. **Modern Tools & Societal Impact:** Use modern tools to conduct experiments, apply technical skills, and develop solutions for societal challenges and sustainable development.
6. **Lifelong Learning & Adaptability:** Recognize the value of lifelong learning and proactively engage in ongoing professional development by embracing and integrating emerging technologies.

EDITORIAL TEAM	
Chief Editor	**Dr. N. Srinivas**
Faculty Coordinators	Mr. G. Siva Sankar Varma Mrs. P. Sandhya
Student Coordinators	Ms. K. Apoorva (UG) Mr. M. Rajesh (PG)
Publisher	Marri Laxman Reddy Institute of Technology and Management

INDUSTRIAL VISIT

The Department of Electronics and Communication Engineering organized an industrial visit to the ATAL Incubation Centre – Centre for Cellular and Molecular Biology (AIC-CCMB), Habsiguda, Hyderabad, on 2nd May 2024. This visit provided ECE students with a unique opportunity to explore the intersection of electronics, communication, and biotechnology, gaining insights into cutting-edge research and technological advancements. Experts at AIC-CCMB introduced students to various incubated startups, research innovations, and the role of electronics in biomedical applications, emphasizing the importance of interdisciplinary collaboration in modern technological development.

During the visit, students witnessed state-of-the-art facilities, including advanced imaging systems, sensor technologies, and IoT-based healthcare applications. The session highlighted the significance of signal processing, embedded systems, and wireless communication in medical research and diagnostics. The interactive discussions with researchers and entrepreneurs enabled students to understand the process of innovation, startup incubation, and commercialization of research-driven technologies.

This visit proved to be an enriching experience for the students, broadening their perspectives on the role of ECE in biomedical applications and entrepreneurship. The exposure to real-world applications of electronics in healthcare and life sciences inspired students to explore new research domains, internships, and collaborative projects. Such industry-academia interactions bridge the gap between theoretical knowledge and practical applications, preparing students for emerging career opportunities in healthcare technology and biomedical engineering.

SEMINAR/STTP

The Department of Electronics and Communication Engineering organized an insightful seminar on "Image Processing Applications Related to the Medical Field" on 14th March 2024, delivered by Dr. T. Padma from VNRVJIET. The session provided ECE students with an in-depth understanding of how image processing techniques are revolutionizing medical diagnostics and treatment. Dr. Padma discussed key topics such as medical image enhancement, segmentation, feature extraction, and AI-driven diagnostic tools, emphasizing their significance in MRI, CT scans, and X-ray analysis. The seminar also highlighted the role of machine learning and deep learning in medical imaging, inspiring students to explore research and career opportunities in healthcare technology.

The session was highly engaging and beneficial for students looking to integrate electronics, signal processing, and artificial intelligence into medical applications.

The Department of Electronics and Communication Engineering successfully conducted a Two-Week Summer Short-Term Course on "Introduction to Biomedical Signal Processing and Its Applications" from 22nd April 2024 to 10th May 2024. The course was delivered by Ms. Dhaladhuli Jahnavi, PhD Scholar, IIT Kharagpur, who provided in-depth insights into the fundamentals and advanced techniques of biomedical signal processing. Students explored key concepts such as ECG, EEG, and EMG signal analysis, noise reduction techniques, feature extraction, and machine learning applications in healthcare. Hands-on sessions and real-world case studies enriched the learning experience, enabling students to bridge the gap between theory and practical implementation.

The program proved to be highly beneficial for students aspiring to pursue research and careers in biomedical engineering, healthcare technology, and AI-driven medical diagnostics.

The Department of Electronics and Communication Engineering organized a One-Week Short Term Training Program on Digital Electronics from 2nd May 2024 to 8th May 2024, conducted by Raja Rao Shastri, Ex-IES Officer. The program provided an in-depth understanding of digital logic design, combinational and sequential circuits, Boolean algebra, flip-flops, and memory devices. With practical demonstrations and real-world applications, students gained hands-on experience in circuit design and troubleshooting techniques. The interactive sessions enriched their technical knowledge, preparing them for careers in VLSI design, embedded systems, and digital hardware development.

The Department of Electronics and Communication Engineering successfully conducted a One-Week Short Term Training Program (STTP) on Innovations in Semiconductors & VLSI Design from 6th May 2024 to 11th May 2024, led by Mr. Madan Gopal Mekala, a renowned expert in VLSI Design from Bangalore. The program focused on cutting-edge advancements in semiconductor technology, ASIC and FPGA design, low-power VLSI techniques, and emerging trends in chip fabrication. Students gained hands-on exposure to EDA tools, circuit optimization techniques, and real-world industry applications, enhancing their

technical expertise and career prospects in semiconductor technology.

The Department of Electronics and Communication Engineering organized a Seminar on Advanced VLSI Design on 8th June 2024, featuring D. Mohan and Rohini from Morrsilicon Valley, Hyderabad. The session covered cutting-edge developments in VLSI technology, including low-power design techniques, ASIC and FPGA advancements, and industry-driven innovations. The seminar provided ECE students with valuable insights into modern chip design methodologies and real-world applications, enhancing their understanding of the rapidly evolving semiconductor industry.

IETE - MEMBERSHIP AWARENESS PROGRAM

Communication Engineering organized an IETE Awareness Seminar on 6th June 2024, led by Mr. Nuli Namasivaya, Chairman of IETE. The seminar aimed to introduce students and faculty to the Institution of Electronics and Telecommunication Engineers (IETE), its mission, and the benefits of becoming a member. Mr. Namasivaya provided an insightful overview of IETE's role in fostering research, innovation, and professional growth in the field of electronics and communication engineering.

During the session, the speaker highlighted various technical events, scholarships, and career-enhancing opportunities offered by IETE. He also emphasized the significance of professional networking, skill development programs, and industry collaborations that come with IETE membership. Students were encouraged to actively participate in IETE chapters, attend technical symposiums, and contribute to research publications, which would help them stay updated with the latest advancements in technology.

The seminar concluded with an interactive session where students and faculty engaged in discussions regarding career prospects, industry trends, and the future of telecommunication and electronics. Mr. Namasivaya addressed queries related to certifications, training programs, and research opportunities available through IETE. The session was highly informative and motivated students to explore professional memberships that would enhance their technical and professional competencies.

At the end of the seminar. Mr. Nuli Namasivaya, Chairman of IETE is felicitated by Dr. R. Murali Prasad, MLRITM Principal and Dr. N. Srinivas, ECE HOD, MLRITM. K. Anil Kumar attended a **Seminar on Awareness Program on Memberships** on 06.06.2024. These activities reflect the active involvement of M.Tech students in technical learning and professional development.

INTERNSHIPS

K. Anand (Roll No: 207Y1A0403), G. Sahith (Roll No: 207Y1A0439), N. Uma Maheswararao (Roll No: 207Y1A0454) and N. Vasu (Roll No: 207Y1A0457) successfully completed a two-months internship on Python Programming for Beginners at Growth Ninja from December 2023 to February 2024. During this internship, they enhanced their programming skills, gained hands-on experience in software development, and worked on real-time projects.

N. Karthik Reddy (Roll No: 207Y1A0413), K. M. Nanda Reddy (Roll No: 217Y5A0421) and V. Sri Lakshmi (Roll No: 217Y5A0444) successfully completed a one-month internship on Web Development at Teachnook from December 2023 to January 2024. During the internship, they enhanced their programming skills, gained hands-on experience in software development, and worked on real-time projects, improving their technical expertise and industry readiness.

Bheemireddy Chennakesava Reddy (Roll No: 207Y1A0405), successfully completed a two-months internship on Software Engineering Job Simulation at Goldman Sachs from January 2024 to March 2024. During the internship, they enhanced their programming skills, gained hands-on experience in software development, and worked on real-time projects, improving their technical expertise and industry readiness.

TECHNICAL EVENTS

V. Dinesh (Roll No: 227Y1A04E2) and Shalini Singh (Roll No: 237Y1A04H2) participated in Ai Days Workshop at JNTUH, Hyderabad from 30th to 31st March 2024. 7 ECE students participated in various Technical Events – Robo race, LFR, Sumo, Robo soccer at Osmania University, Hyderabad on 25th March 2023. V. Dinesh (Roll No: 227Y1A04E2) and D Ravindra (Roll No: 237Y1A04G7) participated in Robo play event at Nalla Narasimha Reddy Group-Integrated Campus, Hyderabad from 21st to 23rd March 2024.

D. Sarika (Roll No: 237Y5A0412) participated in Anveshana program at from 28th February to 01st March 2024. 16 ECE students participated in Valorous-24 a Technical Fest at Marri Laxman Reddy Institute of Technology, Hyderabad from 23rd to 24th February 2024. M. Rajesh (237Y1D5501) and K. Anil Kumar (237Y1D5502) actively participated in various academic and technical events. They attended the National Level Tech Fest **Valorous-2K24** at MLRITM from 23.02.2024 to 24.02.2024. M. Rajesh also participated in a **One Week STTP on Innovations in Semiconductors & VLSI Design** and attended a seminar on **Introduction to Machine Learning** on 04.09.2024,

FACULTY ACHIEVEMENTS

Dr. N. Srinivas, published two Patents "Censor Methods for Collaborative Spectrum Sensing Network with Improved Energy Detectors" on 05th January 2024 and "Method of Evaluation of Ber performance of Noma System Under Various Fading Channels" on 26th January 2024.

Dr. N. Srinivas, published a Journal paper "Spectrum sensing performance of wireless cognitive radio sensor network with soft data fusion over generalized α−μ fading channels", at IEEE International Conference on Mobile Networks and Wireless Communications (ICMNWC) on February 2024.

Mrs. D. Malathi Rani, Published a conference paper "Detection and Classification of Malicious URLs Based on Machine Learning Models", at 7th IET Smart Cities Symposium, SCS 2023 in April 2024, two conference papers "An LSTM based DNN Model for Neurological Disease Prediction Using Voice Characteristics" and "Heart Disease Prediction Using Grid Search CV and Random Forest" in EAI Endorsed Transactions on Pervasive Healthy & Technology, EAI Publishing on March 2024.

Mrs. SK. Himabindhu published a paper "Enhancing FPGA Testing Efficiency: A PRBS-Based Approach for DSP Slices and Multipliers" in International Journal of Electrical and Electronics Research FOREX Publication on February 2024.

D. Rupa Kumar, published a paper" An efficient architecture implementation of a golay code encoder in CMOS 45nm technology", in AIP Publishing on February 2024.

Dr. G. Amarnath, published a paper "Electrical Characterization of Multi-Gate MOSFET with Reduced Short-Channel Effects for High-Power Applications" in International Journal of Nanoscience, World Scientific Publishing Company on February 2024.

STUDENT ACHIEVEMENTS

K. Shashank (Roll No: 237Y5A0407), won Runner Up in the LFR event at Osmania University, Hyderabad on 25th March 2024.

S. Sachin (Roll No: 217Y1A04A6), won First Prize in the LFR event at Osmania University, Hyderabad on 25th March 2024. Sai Anju (Roll No: 217Y1A04A8), won Runner Up in the Robo Sumo event at Osmania University, Hyderabad on 25th March 2024.

V. Dinesh (Roll No: 227Y1A04E2) and D. Ravindra (Roll No: 237Y1A04G7) won First Prize in the Robo Play event at Nalla Narasimha Reddy Group-Integrated Campus, Hyderabad from 21st to 23rd March 2024.

In Valorous Technical fest from 23rd to 24th February 2024 at Marri Laxman Reddy Institute of Technology and Management the following students received prizes at various events - B. Pavan Venkat Goud (Roll No: 237Y1A0490) won second prize in Technical Quiz. K. Apoorva (Roll No: 227Y1A0473) won second prize in Idea Pitching. K Spanadana (Roll No: 227Y1A04C0) won second prize in Circuit Debugging. N. Sowmya (217Y1D5502) secured a placement at **Quadrant Resources Pvt Ltd** on 02-05-2024 with a package of **4 LPA**. Sameena (217Y1D5504) was placed at **IntelliPaat Software Solutions Private Limited** on 01-06-2024 with a package of **5 LPA**. Vemula Lakshman Sai (217Y1D5505) secured a placement at **QuEST Global Engineering Services Private Limited** (Ref: QC20240845/24.12.2024) with a package of **3 LPA**