volume-3

GITAM
DEEMED TO BE UNIVERSITY

WIRELINE

Connecting EECE

JUNE-2025

HALF-YEARLY TECHNICAL E-MAGAZINE

DEPARTMENT OF ELECTRICAL, ELECTRONICS AND COMMUNICATION ENGINEERING

GITAM SCHOOL OF TECHNOLOGY
GITAM (DEEMED TO BE UNIVERSITY)
HYDERABAD

EDITORIAL COMMITTEE

STUDENTS COMMITTEE

About the Department

Department Vision

To excel in Electrical, Electronics and Communication Technologies cultivating innovation with socio-ethical commitment.

Department Mission

1. Empower the students with knowledge to face real-world challenges for holistic development.

2. Conduct multidisciplinary research that makes an impact on society, addressing key challenges through innovative solutions.

3. Foster a culture emphasizing empathy, respect, commitment upholding the ethical standards.

About the Department

The Department of Electrical, Electronics and Communication Engineering (EECE) was established in the academic year 2009 and has since grown into a distinguished hub for education and research. The Department offers a comprehensive range of academic programs, including B. Tech, M. Tech, and Ph.D., catering to students aspiring for electronics and communication engineering excellence.

The Department boasts 40 highly qualified faculty members. Their expertise and dedication are instrumental in fostering a culture of innovation and academic rigor. The Department's emphasis on research and development is one of its core strengths, with a sharp focus on cutting-edge areas such as VLSI Design, Embedded Systems, Power Systems, Power Electronics, Control Systems, Wireless Communications, Internet of Things (IoT), Artificial Intelligence (AI), and Machine Learning (ML).

The faculty members are actively engaged in high-impact research and have collectively published more than 500 research papers in reputed journals and conferences, contributing significantly to the advancement of technology. This research output enhances the Department's reputation and creates opportunities for collaborative projects with industry and academia.

About the Magazine

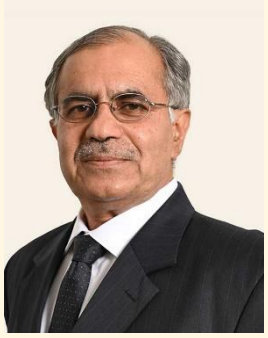
"**WIRELINE**" is the E-Magazine of the Department of Electrical, Electronics, and Communication Engineering at the School of Technology, GITAM University, Hyderabad Campus. It provides a great opportunity for the students and faculty of the Department to share their knowledge, literature, talents, achievements, motivations, and news related to technology on one common platform.

This magazine is an important means for students to express their inner feelings. It also helps them in developing positive & desirable qualities. This magazine contains ten segments: Technical Events, Workshops, Guest Lectures, Seminar, Faculty Development Programmes, Achievements, Delegates Visiting, Cultural/Sports, Industrial Visits, and Placements.

This magazine cannot cover everything. It's a selective view that shows our perspective on the Department of EECE at GITAM University, Hyderabad Campus. If we have made any mistakes or left anything out, we apologize. We have acted in good faith at all times. We hope that you enjoy the reading.

-Editorial Committee

Pro-Vice Chancellor's Message



Prof. D. Sambasiva Rao, Ph.D.
Pro Vice- Chancellor,
GITAM University, Hyderabad Campus

Dear Readers,

The Department of Electrical, Electronics, and Communication Engineering's Technical E-Magazine "WIRELINE" is a commendable initiative. This effort underscores the department's dedication to fostering technical expertise and skill development among students, equipping them to meet the evolving demands of industry and academia.

This E-Magazine offers a platform for students to share innovative ideas, and collaborate on projects beyond conventional classroom learning. It promotes creativity, technical proficiency, and critical thinking while preparing students for the challenges of a rapidly advancing technological world.

Congratulations to the department for this forward-looking initiative and to the editorial team and faculty members for their exceptional efforts in bringing this vision to reality. Their meticulous planning ensures the E-Magazine will serve as a dynamic forum for intellectual exchange and professional growth, encouraging students to articulate complex technical ideas effectively.

This venture promises to be a hallmark of the department's achievements, inspiring further innovation and excellence. I wish the department every success with this endeavor and am confident it will continue to motivate students and faculty to excel and contribute meaningfully to the advancement of their field.

Director's Message

Prof. Rama Sastry Vedala

Director – GITAM School of Technology, Hyderabad &
Dean – Core Engineering, GITAM

Dear Readers,

My heartfelt congratulations to the Department of Electrical, Electronics and Communication Engineering, on the release of the Inaugural issue of the Technical E-Magazine "WIRELINE". This initiative provides a dynamic platform for students and faculty to collaborate, share ideas, and showcase their talents, for holistic development.

In today's world, education transcends the acquisition of knowledge, encompassing skill development, character building, and enhancing the employability of students. With the strong GITAM culture as our foundation, we are well-positioned to achieve these educational objectives and contribute to building a new Aatma nirbhar Bharat.

The rapidly changing global landscape compels us, as educators, to reflect and adapt our educational system to meet evolving challenges. I am confident, this E-Magazine will serve as a significant milestone, fostering creativity, innovation, and intellectual growth of students and Faculty. I am sure, each issue will not only mark our progress, but also ignite imaginations and bring aspirations to life.

I commend the editorial team for their dedication and hard work in realizing this vision. My best wishes to all faculty and students involved in this endeavor for continued success and a promising future ahead.

CONTENTS

TECHNICAL EVENTS

HAVANA'25: A Celebration of Innovation and Excellence

Date: 27-02- 2025 and 28-02-2025

The HAVANA '25 Tech Fest conducted on 27-02- 2025 and 28-02-2025. The HAVANA Tech Fest is a national-level inter-collegiate technical fest hosted by GITAM Deemed to be University, Hyderabad, in collaboration with G-Electra (Smart Systems Club), stood as a testament to the convergence of innovation, technology, and collaboration. Held under the esteemed presence of Chief Guest Dr. G. Rameshwar Rao, this two-day extravaganza unfolded with a grand inauguration ceremony, setting the stage for an immersive journey into the cutting-edge realms of technology. The festival brought together students, faculty, industry professionals, and innovators, fostering a dynamic ecosystem of learning, networking, and competition. In a world driven by innovation, HAVANA Tech Fest '25 emerged as a beacon, drawing together the brightest minds, industry leaders, and technology enthusiasts. The festival provided a unique platform for the exchange of ideas, knowledge, and experiences, transcending conventional boundaries and inspiring the next generation of engineers and

innovators.

HAVANA 2025 inaugural session

HAVANA '25 felicitation to the guest

Key Insights by Chief Guest – Dr. G. Rameshwar Rao

Emphasized the importance of adaptability in the ever-evolving technological landscape. Highlighted the significance of practical learning and hands-on applications in shaping future engineers. Stressed the role of problem-solving and innovation in addressing global technological challenges. Encouraged students to think beyond geographical boundaries, leveraging global opportunities in tech-driven industries.

The inaugural day witnessed a kaleidoscope of events, each adding a unique hue to the fest's vibrant canvas. Competitions across robotics, programming, aerodynamics, and strategy-based games created an electrifying atmosphere, pushing participants to display technical prowess and innovation. Key events as follows.

TurboTRACK – A high-speed challenge testing the precision and design of robotic models.
GripX – A gripping contest where teams showcased robotic gripping mechanisms in real-world applications.
Striker League – A dynamic robotic soccer competition, testing control, speed, and agility.
Knockout – A battle of resilience where bots competed in an elimination-style showdown.
Track It – A line-following robot competition evaluating navigation and efficiency.
AeroMaX – A high-speed drone racing event showcasing aerodynamics and piloting skills.
Splash Rush – A water-based robotics challenge integrating engineering principles with real-world aquatic solutions.
HackEra – The ultimate 24-hour hackathon, where teams delved into an intense coding marathon, developing innovative solutions to contemporary technological challenges.

HAVANA 2025 Robo Knockout

As the sun dawned on the second day, intellectual discussions and entrepreneurial innovation took centre stage. The day featured prototype exhibitions, pitch competitions, and coding battles, enabling students to demonstrate creativity, technical acumen, and business strategies.

As part of our department's initiative to foster innovation, critical thinking, and hands-on experience among students, a series of high-impact technical events were organized that drew enthusiastic participation and showcased exceptional talent.**Protoverse** served as a dynamic platform for students to present **prototype projects**, demonstrating practical solutions to real-world problems. This event brought cutting-edge technological innovations to the forefront, highlighting creativity and engineering acumen.In the **DevBattle**, participants engaged in a **rapid-fire coding challenge** that tested their programming agility and real-time problem-solving skills. The intense and competitive environment encouraged quick thinking and optimized coding practices.**Replica** was a unique engineering challenge where students showcased their ability to **design and replicate real-world models with high precision**,

reflecting a deep understanding of engineering fundamentals and design execution.**InkSpire** provided a platform for students to present their **technical papers** on emerging technologies. Participants impressed the jury with their research, insights, and presentation skills, reflecting the department's strong research culture.Lastly, **Post a Pitch** invited students to present their innovations and research through **visually impactful posters**, promoting peer learning and expert interaction.These events collectively nurtured innovation, teamwork, and technical excellence among future engineers.The grand finale of HackEra saw teams unveiling their innovative solutions, developed through sleepless nights of coding and problem-solving.

HAVANA'25 hackathon

Behind this spectacle of innovation lay months of meticulous planning and coordination. The seamless execution of the diverse events was a result of the harmonious collaboration between faculty members, student volunteers, and industry experts. The festival unfolded as a symphony of creativity and execution, where every element was meticulously orchestrated to deliver an unparalleled experience.The impact of HAVANA Tech Fest 2025 extended far beyond the two-day event. Participants were exposed to cutting-edge technologies and real-world challenges. Students refined their technical, programming, and problem-solving skills. The fest bridged academia and industry, opening doors to career opportunities and collaborations. The event inspired a community of young innovators, fostering collaboration and knowledge exchange.

Media Coverage: HAVANA'25 garnered extensive media coverage, with highlights featured in prestigious print and online platforms. Through a meticulous documentation process, every significant achievement, ground breaking innovation, and insightful discussion was captured, creating an invaluable resource for future reference and inspiration.

HYDERABAD: HAVANA-2025: A GRAND CELEBRATION OF INNOVATION AND TECHNOLOGY AT GITAM

By Team — On Feb 27, 2025

EDUCATION

గీతంలో నేషనల్ టెక్ ఫెస్ట్ 'హవానా25'

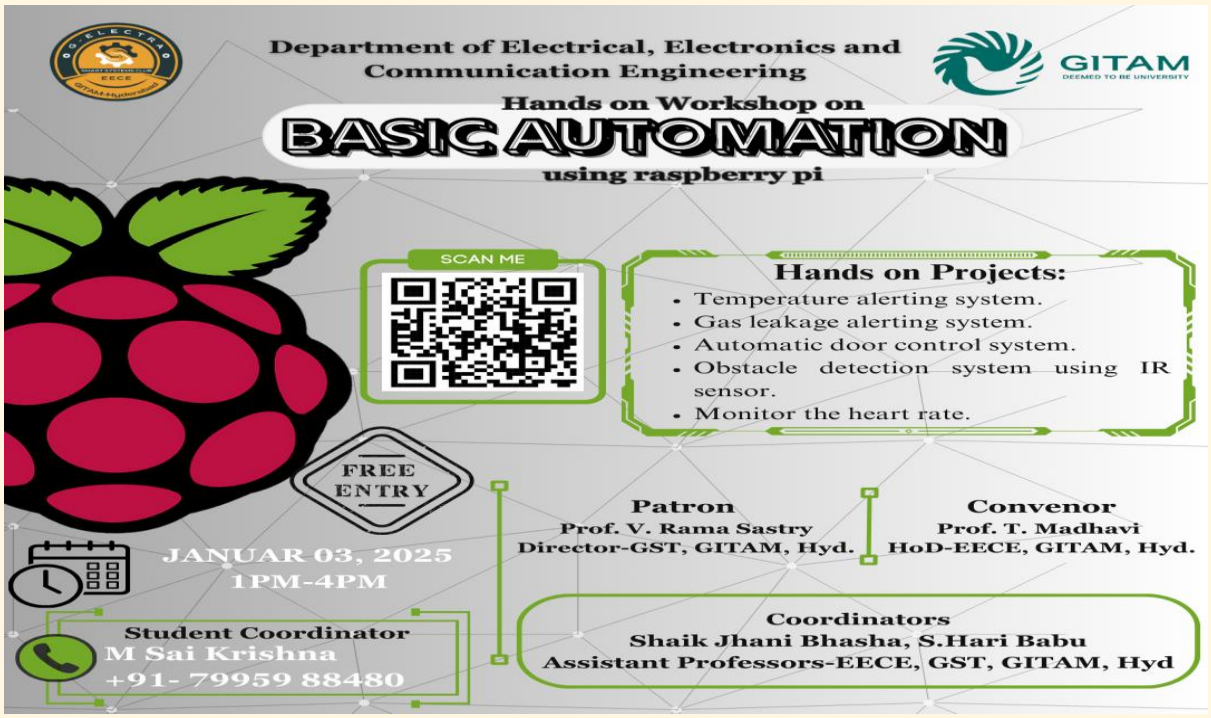
మెదక్ February 28, 2025

HAVANA' 25 media coverage

Workshops and FDP's

Hands-on workshop on "Basic Automation using Raspberry Pi"

A hands-on workshop was organized by the department of EECE and G-Electra club on 03/01/2025, for the students of all the branches from the GITAM School of Technology, Hyderabad campus under the patronage of the Director, GST Hyderabad, Prof. V. Rama Sastry.



A brochure was released with the workshop details and registration link and circulated among all the students at GITAM School of Technology, Hyderabad asking the students to register for the workshop. There was an overwhelming response from the students. 150 students belonging to 1st, 2nd and 3rd year from all the departments registered. On the day of the workshop, 125 students turned up. For maintaining the quality of the workshop, the coordinators pursued many students and assured them that another such workshop would be conducted soon to accommodate all the interested students. Finally, the participants were restricted to 47. The workshop started with the formal inauguration by the convener for the workshop and the HOD of EECE department, Prof. T Madhavi. Then the coordinators, Mr. Sk Jhani Bhasha and Mr. S Haribabu, Assistant Professors of EECE department, explained to the participants about the Raspberry Pi SOC, its widespread applications, loading the OS into the board and demonstrated the hardware connections, and basic automation projects. Student volunteers from 3rd and 2nd year helped the participating students in doing the hands-on automation projects. All the students participated and worked on the project with enthusiasm.

Hands on session in “Basic Automation using Raspberry Pi”

FDP's

1. FDP on "EV Technologies: Development's and challenges"

The Department of EECE has conducted a 3-day FDP on "EV Technologies: Developments and challenges" from 22-02-2025 to 24-01-2025. Eminent resource people from IITs including IIT Gandhinagar, IIT Hyderabad, and Industry (National Instruments, TATA Elexi, Siemen's) delivered the sessions.

The First session of FDP started with the presentation of Dr. K. Ragavan from IIT Gandhinagar, the session covered topics of Introduction to EV technology and components, Motors Suitable for EV Applications, Control of BLDC and PMSM for Electric Vehicle Applications. The second session was given by a resource person from National Instruments and covered topics of Challenges in EV and possible research areas, How National Instruments can help to tackle the EV challenges.

The second day morning session started with the presentation of Dr. Venkatesham from IIT Hyderabad, and covered topics related to Types of Electric Vehicles, Electric vehicle modelling, Vehicle dynamics and power train mechanism. Some of the other topics covered in the subsequent sessions are EV Technologies: Developments and Challenges, Power quality, vehicle to grid and grid to vehicle connection, Battery management system (charging and discharging), EV Motor Control Modelling using MATLAB, Model-Based Design for Electric Vehicle, Component sizing and design control algorithm, AC and DC Electric Vehicle charging protocol, Real time implementation

FDP on "EV Technologies: Development's and challenges" inaugural

FDP on "EV Technologies: Development's and challenges" training session

FDP on "EV Technologies: Development's and challenges" hands on session

2.FDP on "IOT Trends and innovations" in association with Phytech, Bangalore

Date: 10-03-25 and 11-03-2025

The Department of Electronics and Communication Engineering organized a two-day Faculty Development Program (FDP) on **"IoT Trends and Innovations"** in association with **Phytech, Bangalore**, aimed at enhancing the technical knowledge and pedagogical skills of faculty in the rapidly evolving domain of the Internet of Things (IoT). The event was conducted from 10-03-2025 to 11-03-2025, and witnessed enthusiastic participation from faculty members across various engineering institutions.

The FDP was designed to bridge the gap between academic concepts and industrial practices in IoT, providing a comprehensive understanding of current trends, emerging innovations, and real-time applications. Experts from Phytech delivered insightful sessions on key topics including **IoT architecture, edge computing, sensor integration, IoT communication protocols, and cloud connectivity**. Hands-on sessions and case studies enabled participants to engage with real-time applications and prototype development using industry-standard tools and platforms such as **Arduino, Raspberry Pi, and NodeMCU**..

FDP on "IOT Trends and innovations" inaugural session

One of the highlights of the FDP was the session on **AI-integrated IoT systems**, which explored how machine learning algorithms are being embedded into IoT applications to enhance automation and predictive analytics. The sessions also addressed **security challenges in IoT networks**, emphasizing the importance of secure design practices in smart systems.

The program concluded with a panel discussion on future opportunities in IoT, emphasizing interdisciplinary research, start-up ecosystems, and industry-academia collaboration. Feedback from the participants reflected the program's effectiveness in enriching their knowledge and inspiring innovative teaching methodologies.

The FDP proved to be a significant initiative in fostering a collaborative learning environment and preparing faculty members to integrate IoT-based modules into curriculum and research initiatives. The department extends its gratitude to Phytech, Bangalore, for their technical support and for empowering academic professionals to stay aligned with industrial advancements.

FDP on "IOT Trends and innovations" Dean core engineering addressing audience

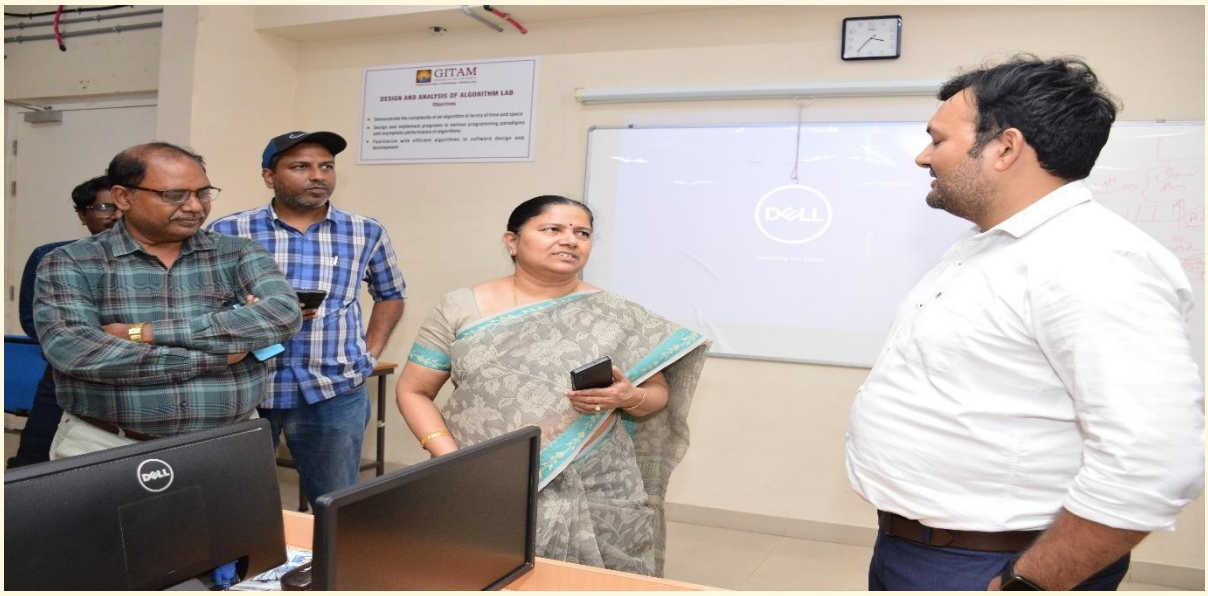
3. Six-Day Faculty Development Programme (FDP)

Theme: Embedded Systems Programming on embedded Linux with Industry 4.0 Applications

Organized by: GITAM University, Hyderabad Campus

Faculty Development Programme on Embedded Linux and Industry 4.0 Applications

The Department of Electrical, Electronics and Communication Engineering successfully organized a **six-day Faculty Development Programme** on **"Embedded Linux Programming and Industry 4.0 Applications"** from 16-06-2025 to 23-06-2025. The workshop aimed to empower faculty with the knowledge and hands-on experience required to integrate modern embedded systems and IoT technologies into academic and research practices. The key objectives of the program were to familiarize participants with Linux fundamentals, embedded Linux programming, hardware interfacing, sensor integration, and advanced concepts such as **multi-protocol gateway development** and **smart energy monitoring systems** relevant to **Industry 4.0**. Each day of the workshop was meticulously structured into theory and hands-on sessions



Faculty Development Programme on "Embedded Linux and Industry 4.0 Applications"

Knowledge sharing session

First day focused on **Linux basics and programming**, introducing shell commands, file systems, and scripting techniques. Second day explored **embedded Linux porting**, including kernel configuration and cross-compilation. Third day provided insights into **hardware interfacing and sensor programming**, with real-time applications on embedded platforms. Fourth day delved into **advanced sensor interface programming**, covering multi-sensor data

acquisition. Fifth day highlighted **Industry 4.0-aligned project demonstrations**, such as **multi-protocol gateway systems** and **smart energy monitoring solutions** with live dashboards. Sixth day concluded with a demonstration of consolidated **hands-on projects**, showcasing practical implementation skills gained by the participants. The workshop enabled faculty to strengthen their expertise in embedded systems development, apply **hardware-software co-design** principles, and gain actionable insights for integrating **IoT-based lab experiments** and **project ideas** into the undergraduate curriculum. The department extends its appreciation to the organizing team and all participants for making the FDP a success. The knowledge and skills gained are expected to significantly contribute to academic innovation and student mentoring in cutting-edge technologies.

Faculty Development Programme on Embedded Linux and Industry 4.0 Applications

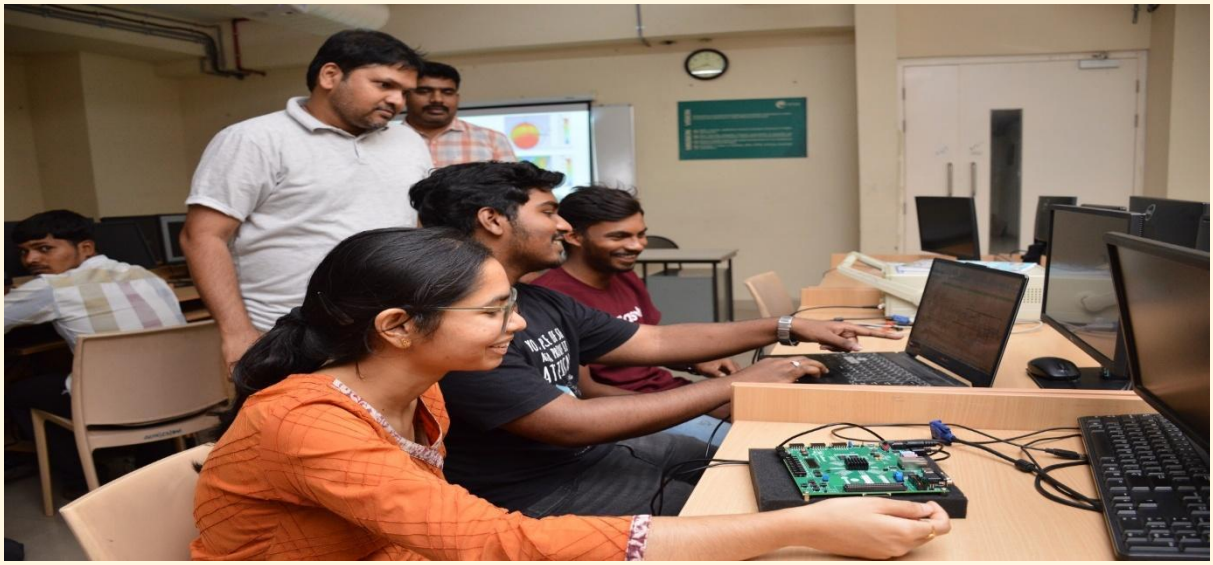
Valedictory session

4.Five-day Intensive Course Future Tech FPGA & 5G Antennas

Organized by: School of Technology, Hyderabad
Departmemt of Electrical, Electronics and Communication Engineering

Date: 23-06-2025 to 27-06-2025

The 5-day intensive course enabled participants to develop strong foundational knowledge in FPGA design and millimeter-wave antenna engineering. Participants gained practical experience with hardware programming using Verilog and applied this knowledge to real-time FPGA applications. Through hands-on sessions using ZedBoard and Pynq boards, learners successfully implemented and optimized digital circuits for high-speed data processing. The course enhanced participants' industry readiness by exposing them to real-world FPGA project workflows. In parallel, attendees mastered the principles of millimeter-wave antenna design using Advanced Design System (ADS) software. They acquired skills in simulating and optimizing antennas for cutting-edge 5G, radar, and satellite communication systems. Learners practiced layout design and EM simulation techniques to evaluate antenna performance. The course emphasized beamforming concepts and introduced phased array systems for directional communication. High-gain antenna design and optimization strategies were explored in detail to improve system efficiency. Collaborative lab exercises helped participants understand the challenges and solutions in both hardware and antenna domains. By the end of the course, learners demonstrated improved confidence and competence in applying theoretical knowledge to practical problems. Overall, the course successfully bridged the gap between academic learning and industry application in future communication technologies.



Five-day Intensive Course Future Tech FPGA & 5G Antennas hands on session.

Faculty industry internships

1.Faculty Industrial Visit to Mahindra Automotive Unit – Zaheerabad

To strengthen industry-academia linkage and align academic research with industrial advancements, a five-member interdisciplinary team from the core engineering branches of GITAM School of Technology, Hyderabad, undertook a five-day industrial visit to the **Mahindra Automotive Manufacturing Unit** in Zaheerabad from 16-06-2025 to 20-06-2025.The Zaheerabad unit is one of Mahindra & Mahindra's flagship facilities, specializing in the production of **Small Commercial Vehicles (SCVs)** like *Mahindra Jeeto* and *Bolero Pick-Up*, and **Large Commercial Vehicles (LCVs)** such as *Mahindra Blazo* and *Furio*. The **Jeeto**, designed for urban and semi-urban last-mile delivery, stands out for its compact design, fuel efficiency, and flexibility across diesel, CNG, and electric variants.

The visit provided deep insights into various divisions within the plant:

- **Body Shop**: Focuses on the welding and assembly of vehicle shells using highly automated systems. Robots handle precision-intensive tasks like stamping, cutting, and aligning body panels, ensuring high quality and safety.
- **Engine Shop**: Specializes in engine assembly, integrating key components and ensuring stringent performance standards. The engines undergo rigorous testing before integration into vehicles.
- **Paint Shop**: Includes a multi-step coating process—pre-treatment, primer, base coat, clear coat, and curing—performed with robotic precision. The **Electrode Coat Deposition (ECD)** method ensures uniform corrosion-resistant coatings using DC voltage supplied via **rectifier units**.
- **Welding Systems**: A mix of **integrated robotic welding** and **non-integrated manual welding** caters to mass production and specialized assembly. **Robotic MIG welding** enhances production speed, safety, and weld quality.
- **Electric Vehicle Division**: Focuses on developing eco-friendly electric cars, three-wheelers, and SCVs, supporting India's green mobility goals.
- **Last Mile Mobility (LMM)**: Offers cost-effective transport solutions through electric and combustion-powered SCVs, aiming to reduce congestion and pollution. Guided by Mahindra's **Rise Pillars**—*Accepting No Limits*, *Alternative Thinking*, and *Driving Positive Change*—LMM fosters innovation in sustainable mobility.
- **Sustainability Initiatives**: The unit operates a 1 MW **solar power plant** and actively contributes to reducing the carbon footprint through renewable energy usage and green vehicle production.
- **Total Productive Maintenance (TPM)**: Embraces the "Zero Defects" philosophy, ensuring quality at every stage of manufacturing through defect prevention, waste reduction, and continuous improvement.

- **Material Management & Logistics**:
    - *Procurement*: Employs Just-in-Time (JIT) inventory strategies, strong supplier relationships, and strategic sourcing.
    - *Inventory*: Uses ABC analysis, EOQ methods, and real-time tracking via barcodes and RFID.
    - *Handling*: Deploys automated conveyors, robotic systems, and AGVs for safe, ergonomic material movement.
    - *Production Planning*: Integrates **Material Requirements Planning (MRP)** and demand forecasting tools for efficient scheduling.
    - *Cost Control*: Implements lean manufacturing principles to eliminate waste and optimize resource utilization.

This comprehensive industrial visit offered faculty valuable exposure to real-time production systems, automation, and quality assurance techniques used in one of India's leading automotive manufacturing setups. It also opened avenues for collaborative research in areas like EV development, sustainable manufacturing, robotics, and supply chain optimization.

Faculty at mahindra company, Zaheerabad

.


Mahindra team of engineers with faculty.

2.T-Works

Faculty industry internships at T-Works: A Gateway to Innovation, Prototyping, and Design Thinking
Date: 23-06-2025 to 27-06- 2025
Venue: T-Works, Raidurg, Hyderabad
Faculty attended are Mr S Ramprasad, Mr A Samba shiva, Mr S.Srinivasulu and Mr D Chandru from the Department of Electrical, Electronics and Communication Engineering.

The Department of Electrical, Electronics and Communication Engineering organized a five-day immersive visit and hands-on learning program at T-Works, Hyderabad—India's largest fully integrated prototyping center. The visit aimed to expose faculty and students to the vast opportunities in hardware innovation, rapid prototyping, IoT development, and design thinking. T-Works, spread over 78,000 sq. ft, offers access to 200 industry-grade tools across metalworking, electronics, wood, ceramics, laser cutting, and 3D printing domains, supporting end-to-end engineering solutions from idea to prototype.

The program began with an overview of T-Works' mission, facilities, and support system for innovators. Participants visited various labs, Metal Shop (CNC machining, welding), Advanced Rapid Prototyping Lab (Zund G3 cutter, UV printer), 3D Printing Lab, Electronics & Testing Lab, Woodworking and Ceramic Studio, Laser and Engraving Shop This was followed by a session on the Mindset of Makers and the fundamentals of design thinking**,** which emphasized creative problem-solving, iteration, and user-centric innovation.

Sessions focused on **understanding the design thinking process** through engaging examples and interactive activities. The second half of the day covered **market and client research**, helping participants identify customer pain points, define user personas, and recognize market gaps—skills crucial for successful product development**.** A highly engaging session introduced **drone technology**, highlighting its wide-ranging applications in sectors such as **agriculture, infrastructure, healthcare, defense, disaster management,** and **education**. Real-world examples demonstrated drones' potential in surveillance, firefighting, logistics, and scientific research. The session also covered **drone regulations in India,** including registration protocols, licensing requirements, no-fly zones, and safety compliance. Participants were introduced to various **microcontrollers**, with an in-depth focus on the **Arduino Uno (ATmega328P).** The hands-on session involved basic interfacing and programming using the **Arduino IDE**, demonstrating real-time applications such as LED control, sensor integration, and PWM signal generation. This session reinforced core embedded systems concepts and their relevance in IoT product development**.**The final day emphasized the importance of clear documentation through the **Product Requirements Document (PRD)** framework. Sessions detailed each stage—starting from defining the scope and gathering requirements to wireframing, prioritization, timeline setting, and stakeholder review. Participants gained valuable insights into managing product lifecycles from ideation to launch.T-Works offers vast opportunities for **students** to engage in **hands-on prototyping,** participate in **internships,** attend **bootcamps,** and gain support for **startups and capstone projects. For faculty, T-Works serves as a collaborative platform for research prototyping, industry consultancy,**

curriculum enhancement, and student mentoring. Faculty can also **co-host events,** contribute to **skill-based programs, and explore joint** initiatives with startups.

The visit to T-Works provided participants with invaluable exposure to modern prototyping tools, product development workflows, and entrepreneurial thinking. The program bridged the gap between academic knowledge and industry practice, encouraging faculty to incorporate **design thinking, embedded systems**, and **practical engineering** into teaching and research. The department acknowledges T-Works for this enriching experience and looks forward to future collaborations.

Interative session at T-works

Working with drones at T-works

Guest Lectures

1.IEEE Guest Lecture on "Advanced Semiconductor packaging Techniques"
Event Date: 10-03-2025

The Department of Electrical, Electronics, and Communication Engineering (EECE) at GITAM School of Technology, Hyderabad, in association with the IEEE GITAM student branch chapter, hosted a distinguished guest lecture on 'Advanced Semiconductor Packaging Techniques' by Dr. Venkata Mokkapati, Global Director & Application Engineering at AT&S AG, Austria.

Dr. Mokkapati provided in-depth insights into cutting-edge semiconductor packaging technologies, including 2D, 2D+, 2.5D, 3D, 3.5D, and the latest 4D packaging, which integrates components through substrate folding or bending for enhanced electrical interconnectivity. He highlighted the demand for advanced build-up materials used in contemporary package structures such as BGA, CSP, and coreless packaging, emphasizing the critical factors of fine line and space, fine via pitch, low warpage during cure and reflow, and high insulation reliability.

Discussing the future of advanced packaging and IC substrates, Dr. Mokkapati elaborated on innovations such as D2 connection, larger body sizes, coefficient of thermal expansion (CTE) mismatch solutions, power delivery advancements, and improved thermal dissipation. He also addressed key developments in semiconductor technology, covering major technology blocks, top industry players, and the evolving AI value chain.

The lecture further delved into significant industry transformations, ABF substrate construction, high-performance computing (HPC) architecture, and the semiconductor chips driving future innovations. Dr. Mokkapati also shared insights on India's emerging semiconductor manufacturing landscape, citing projects by leading companies such as Micron, Renesas, Stars, Kaynes Technology, TATA-PSMC, and Adani-Tower Semiconductor.

Engaging with the students, Dr. Mokkapati responded to queries from EECE students, fostering a dynamic exchange of knowledge and ideas. The event concluded with a felicitation ceremony led by Prof. T. Madhavi, Head of the EECE Department, and Prof. Prasantha R. Mudimela, the Convenor, who honored Dr. Mokkapati for his invaluable contributions

2.Guest lecture on "Applications of Signal Processing to Audio and Acoustics".

Topic: Applications of Signal Processing to Audio and Acoustics

Speaker: Prof. Karlheinz Brandenburg (Father of MP3)

Organized by: EECE

Date: 08-04-2025

An expert talk was organized on the topic "Applications of Signal Processing to Audio and Acoustics," delivered by the eminent scientist Prof. Karlheinz Brandenburg, globally renowned as the "Father of MP3." This session aimed to provide participants with insights into how advanced signal processing techniques have revolutionized the fields of audio compression, acoustics, and multimedia communications. Prof. Karlheinz Brandenburg is a pioneering electrical engineer and mathematician best known for his pathbreaking work on perceptual audio coding and the development of the MP3 format (MPEG-1 Audio Layer III). His research transformed digital audio by enabling high-quality compression, which laid the foundation for today's streaming, digital music, and portable audio industries.

Prof. Brandenburg began by explaining the basics of audio signals, sampling, quantization, and the importance of Fourier analysis in understanding frequency content. Discussed how time-domain and frequency-domain representations are both crucial for analysing and manipulating sound. Provided an in-depth view of psychoacoustics, the science of how humans perceive sound, which underpins perceptual coding techniques. Explained how leveraging psychoacoustic models allows for removing inaudible parts of the signal, achieving drastic data compression without perceived loss of quality. Illustrated the architecture of the MP3 codec, including filter banks, MDCT (Modified Discrete Cosine Transform), and bit allocation. Highlighted how signal processing aids in room acoustics optimization, echo cancellation, and noise reduction. Gave examples of acoustic measurements and how digital filters are used to shape the audio environment. Briefly touched on the evolution of newer codecs like AAC (Advanced Audio Coding) and Opus, emphasizing continual improvements in compression efficiency and audio fidelity. Mentioned current research in immersive audio (e.g., 3D sound for VR/AR) and smart acoustics systems. Discussed challenges in processing complex audio environments, especially with dynamic noise sources. Introduced emerging areas like machine learning in audio for speech enhancement and audio scene analysis. The session significantly enhanced participants' understanding of how signal processing algorithms power everyday audio applications, from mobile music players to smart speakers and video conferencing systems. Students and faculty gained appreciation for interdisciplinary aspects, including psychoacoustics, DSP algorithms, and hardware constraints.

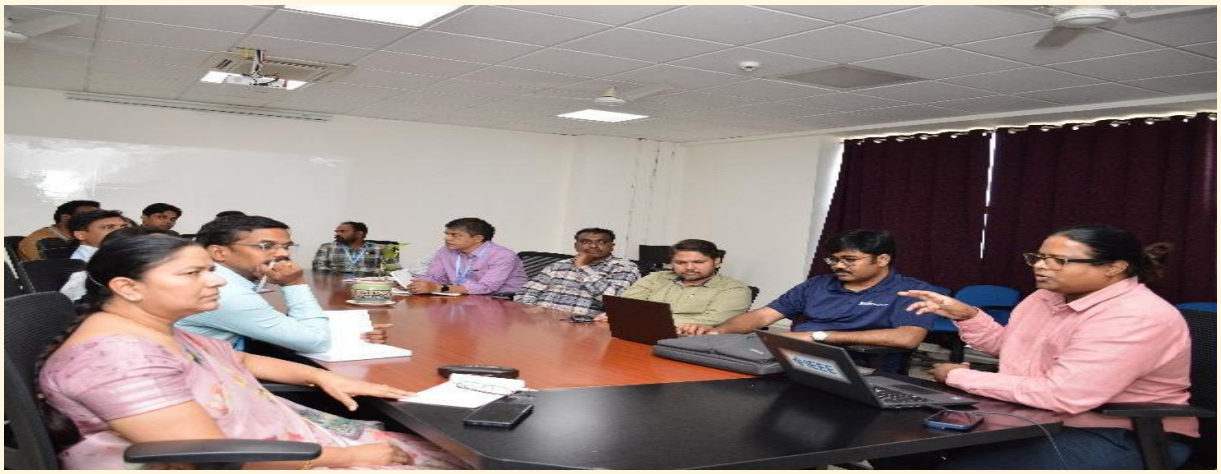
Motivated participants to explore research and projects in audio signal processing, acoustics simulation, and multimedia systems. The expert lecture by Prof. Karlheinz Brandenburg was both inspiring and deeply informative, offering a rare opportunity to learn directly from a pioneer who transformed the way the world listens to music. It underscored the profound impact of signal processing on modern digital life, and encouraged attendees to delve deeper into this dynamic and innovative field.

"Applications of Signal Processing to Audio and Acoustics" inaugural session

3.Guest lecture on transformative teaching, learning and research with IEEE 5G/6G innovation testbed

Date:05-05-2025, Venue: T and P conference hall, GITAM Hyderabad campus.

The guest lecture on *"Transformative Teaching, Learning, and Research with IEEE 5G/6G Innovation Testbed"* was conducted on 5th May 2025At EECE, GITAM Hyderabad. Organized in collaboration with IEEE, the event brought together academicians, researchers, and industry professionals to explore the dynamic integration of 5G/6G technologies into higher education and advanced research. The session emphasized how the IEEE 5G/6G Innovation Testbed can be utilized as a powerful platform to drive innovation, support hands-on learning, and bridge the gap between theoretical knowledge and real-world application.



Transformative teaching, learning and research with IEEE 5G/6G innovation testbed interactive session.

Keynote speakers from both academia and industry shared valuable insights on emerging trends in next-generation wireless communication, highlighting their potential to revolutionize education and research methodologies. The session began with an overview of the capabilities of the IEEE 5G/6G Testbed, which allows students and faculty to simulate, experiment, and deploy cutting-edge solutions in areas such as IoT, AI-driven networks, smart mobility, and ultra-low latency applications. Panel discussions focused on curriculum transformation through experiential learning, fostering interdisciplinary research, and integrating AI/ML algorithms into network design using the testbed. Live demonstrations showcased how the testbed can enhance teaching by offering real-time experimentation environments, providing students with the opportunity to innovate in areas like V2X communication, smart cities, remote healthcare, and edge computing.

The event concluded with a Q&A session, followed by networking opportunities for participants to collaborate on future projects. Overall, the program served as a catalyst for educators and researchers to rethink pedagogical approaches and embrace 5G/6G technologies for impactful, future-ready teaching and innovation. The IEEE 5G/6G Innovation Testbed was recognized as a transformative tool for capacity building and accelerating India's role in global communication technology leadership.

Transformative teaching, learning and research with IEEE 5G/6G innovation testbed concluding session

4. Guest Lecture on "Quality Technical Papers for IEEE"

Organized by: Department of Electrical, Electronics and Communication Engineering (EECE)

Speaker: P Dhanu Kumar.

Date:17-05-2025, Venue: J 403

The Department of Electrical, Electronics and Communication Engineering (EECE) organized a guest lecture on the topic "Quality Technical Papers for IEEE." The session was delivered by Dr. P Dhanu Kumar, an esteemed researcher and experienced IEEE author/editor, aimed at enhancing the research writing skills of faculty members, postgraduate students, and final-year undergraduates. The objective of the session was to provide insights into crafting impactful technical papers suitable for publication in high-quality IEEE journals and conferences.

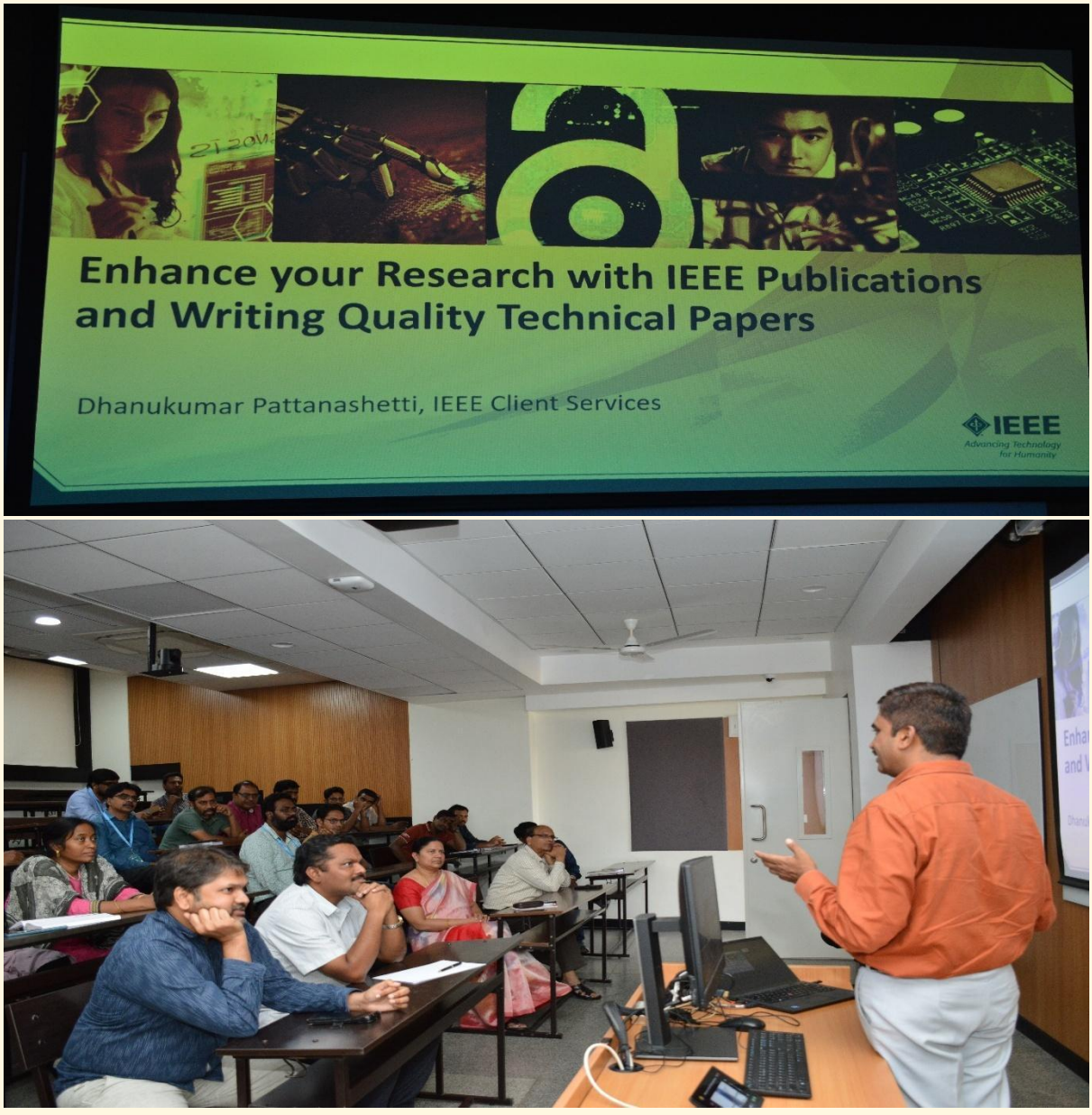
The speaker provided an overview of IEEE's publishing ecosystem, including journals, transactions, magazines, letters, and conferences. Emphasized the differences between journal papers (deep, archival contributions) and conference papers (shorter, cutting-edge results). Explained the structure of a typical IEEE paper: Abstract, Introduction, Methodology, Results, Discussion, Conclusion, and References. Highlighted the importance of a clear problem statement, strong motivation, rigorous methodology, reproducible experiments, and insightful conclusions.

Discussed writing techniques such as, using concise, formal language, avoiding plagiarism and properly citing prior work, maintaining logical flow through sections and sub-sections. Effective use of figures, tables, and mathematical equations. Detailed the IEEE peer review process, the role of reviewers, and common reasons papers get rejected. Addressed ethical issues such as self-plagiarism, duplicate submission, and data fabrication, stressing adherence to IEEE publication ethics. Introduced IEEE Author Digital Tools including IEEE PDF express, IEEE Template (LaTeX & MS Word), Reference Manager tools, and IEEE Author Centre. Encouraged attendees to register on IEEE Xplore to read exemplary papers. Suggested ways to identify novel research gaps by analysing recent IEEE publications and special issues. Encouraged collaboration and interdisciplinary projects to increase the novelty and citation potential. Outcomes of the Session

Faculty and students gained valuable insights into the standards of quality expected by IEEE, enabling them to prepare stronger manuscripts for submission. Participants understood the critical importance of originality, technical depth, and clear communication in achieving acceptance in top-tier IEEE journals and conferences. The lecture motivated attendees to aim for higher levels of research contribution and visibility on international platforms.

The guest lecture on "Quality Technical Papers for IEEE" was highly beneficial and well-received by all participants. It equipped attendees with practical knowledge and strategies to

elevate their research manuscripts to meet IEEE standards. The session aligns with the department's ongoing efforts to promote high-quality research output and to prepare faculty and students for successful academic publishing.



Quality Technical Papers for IEEE expert interaction session

Webinars

1.Webinar on "Designing the Future: From Silicon to Systems"

Date:29-05-2025, Speakers: Prof T. Madhavi and Dr Md Masood ahmad

The Department of Electrical, Electronics and Communication Engineering (EECE) presents an insightful webinar titled "Designing the Future: From Silicon to Systems", aimed at exploring the transformative journey from fundamental semiconductor technologies to the development of complex electronic systems that shape our modern world. In today's rapidly evolving technological landscape, innovation in electronics is not confined to one layer of abstraction—it spans across multiple domains, from the microscopic design of integrated circuits (ICs) on silicon wafers to the large-scale integration of systems in applications like artificial intelligence, 5G communications, smart devices, robotics, and the Internet of Things (IoT). This webinar offers participants a comprehensive overview of how ECE professionals contribute at every stage of this journey. The "Silicon" part of the title refers to the semiconductor base of modern electronics. At this foundational level, the focus is on device physics, fabrication techniques, and the design of transistors and logic gates using tools like VLSI (Very-Large-Scale Integration). Innovations in materials and nanotechnology have led to powerful, energy-efficient chips that serve as the brains of every modern electronic device. Participants will gain insights into how engineers use EDA tools, HDL languages (such as Verilog and VHDL), and semiconductor manufacturing processes to design and optimize integrated circuits. As we move "to Systems," the focus shifts to system-level design and integration, where multiple hardware and software components are brought together to perform complex functions. This includes embedded systems, signal processing, communication protocols, and machine learning accelerators. Engineers must manage trade-offs between power, speed, size, and cost while ensuring reliability and security. The systemic approach integrates microelectronics, computer engineering, communication systems, and control theory to build end-to-end solutions.

The webinar will also highlight real-world applications, showing how ECE innovations power everything from smartphones and autonomous vehicles to smart grids and medical devices. The discussion will emphasize the growing importance of interdisciplinary collaboration and the role of EDA tools, FPGA prototyping, SoC design, and AI-accelerated chips in driving future innovations. Moreover, attendees will learn about career paths, industry trends, and research opportunities in areas like chip design, embedded AI, hardware security, and cyber-physical systems. This webinar serves as an ideal platform for students, researchers, and educators to understand the significance of ECE in shaping the digital future.

2. Webinar on **"Electric to Intelligent: The Evolution of Autonomous EVs"**.

Date: 06-06-2025, Speakers: Prof T. Madhavi and Dr Bighnaraj Panda

The Department of Electrical, Electronics and Communication Engineering (EECE) presents a webinar on **"Electric to Intelligent: The Evolution of Autonomous EVs.** This webinar is conducted on 06-06-2025 for the parents and students. The speaker of the webinar is Prof Madhavi HOD, EECE and the Dr Bighanraj Panda.

The transformation of electric vehicles (EVs) into intelligent autonomous machines marks a pivotal moment in the history of transportation. From the initial push for sustainability through electrification, the automotive industry has rapidly evolved to integrate cutting-edge artificial intelligence, advanced driver-assistance systems (ADAS), and robust sensor technologies, giving rise to autonomous EVs that are not just vehicles but smart mobility platforms.

Early electric vehicles focused on energy efficiency and reducing carbon emissions. However, today's autonomous EVs go beyond electrification. They feature integrated AI algorithms capable of decision-making, LiDAR and radar sensors for environmental perception, and real-time data analytics for route optimization and predictive maintenance. These advancements have led to improvements in safety, convenience, and operational efficiency.

Manufacturers and tech giants have formed powerful collaborations to push the boundaries of innovation. Companies like Tesla, Waymo, Nvidia, and traditional automakers have invested heavily in machine learning, V2X (vehicle-to-everything) communication, and next-gen battery systems to support fully autonomous electric fleets.

As of mid-2025, cities across the globe are piloting smart infrastructure to support these vehicles, including dynamic traffic control systems, autonomous parking zones, and wireless charging lanes. With regulatory frameworks gradually adapting, the next decade is poised to witness widespread deployment of autonomous EVs across public and private transportation networks. The journey from electric to intelligent is redefining mobility—creating not only a cleaner future but also a smarter one.

Achievements

Faculty achievements

1) Sponsored project

Project title: *"Deterministic Creation and Characterizations of Negatively Charged Single Boron Vacancy in Hexagonal Boron Nitride for Quantum Technologies".*

Principle investigator: Dr. Shantanu Saha

Co- Principle investigator: Dr. Antonio Polimeni

sanctioned date: 01-05-2025

sanctioned organization: DST

sanctioned amount:46 lakhs

Dr. Shantanu Saha is an Associate Professor in the Department of Electrical, Electronics & Communication Engineering at GITAM (Deemed to be University), Hyderabad**.** He earned his PhD in Microelectronics from IIT Bombay, where he specialized in thin-film synthesis and characterization of wide bandgap semiconductors such as ZnO and ZnMgO. Afterward, he was a researcher at Ohio State University focusing on growth of large-area hexagonal boron nitride (h-BN) for single-photon emitters—crucial in quantum photonics.Under the India-Italy Joint Science & Technology Cooperation call for 2025–27, Dr. Shantanu Saha is the Indian Principal Investigator on a funded quantum technologies project titled: *"Deterministic Creation and Characterizations of Negatively Charged Single Boron Vacancy in Hexagonal Boron Nitride for Quantum Technologies".* This project is co-led by Dr. Antonio Polimeni at Sapienza University of Rome, and supports the development of engineered boron vacancies in h-BN for quantum applications.

2) Consultancy project

(ii) Project title: Development of Wifi and mobile network-based RT performance monitor for Distribution Transformers.

sanctioned date: 06-05-2025

sanctioned organization: M/s. Chenna Digital Solutions (P) Limited

sanctioned amount: Rs 1,45,000.

Dr. S V Padmavathi is an Assistant Professor in the Department of Electrical, Electronics & Communication Engineering at GITAM (Deemed to be University), Hyderabad. She completed her PhD in JNTU Hyderabad, her areas of interests are Power Systems, Power Quality, Power System Security, Flexible alternating Transmission Systems and Optimization techniques. She received a consultancy project from Chenna Digital Solutions Private Limited, Hyderabad with the support of Venture Development Centre., GITAM, Hyderabad Campus for the development of Wifi and mobile network-based RT performance monitor for Distribution Transformers. This system monitors the parameters of distribution transformer and transfers data to control centre.

3)NPTEL Courses

1)K. Manjunatha Chari was awarded a Certificate of Appreciation by NPTEL for his active participation during the Jan–Apr 2025 session. In recognition of his consistent commitment to online learning, he was also honored with the title of "NPTEL Believer," reflecting his dedication to continuous professional development.

2)Dr. Arun Jyothi Eddla has successfully completed two prestigious 12-week NPTEL certification courses during the Jan–Apr 2025 session: “Data Analytics with Python” and “Introduction to Internet of Things.” These accomplishments highlight her strong analytical capabilities, programming proficiency, and foundational knowledge in emerging technologies. Her commitment to continuous learning and professional development is evident through her active engagement with advanced concepts in data science and IoT, aligning with the department’s vision of fostering interdisciplinary expertise and technological advancement. These certifications add value to her academic contributions and enhance the department's overall competency in cutting-edge domains.

Dr. Anitha has successfully completed three NPTEL certification courses during the Jan–Apr 2025 session: “Introduction to Machine Learning” (12 weeks), “Python for Data Science” (4 weeks), and “Reinforcement Learning” (12 weeks). These accomplishments highlight her strong analytical mindset, proficiency in Python programming, and deep interest in the evolving domains of data science and artificial intelligence. Her consistent pursuit of knowledge through these advanced and emerging subjects demonstrates a strong commitment to continuous professional growth and academic excellence. These certifications significantly enhance her expertise and contribute to the department’s focus on innovation and research in cutting-edge technologies.

Mr. V. Shiva Prasad Nayak has demonstrated exemplary commitment to professional growth and continuous learning by successfully completing three NPTEL certification courses during the Jan–Apr 2025 session: “Switching Circuits and Logic Design” (12 weeks), “Object-

Oriented System Development Using UML" (12 weeks), and earning distinction as an active participant. His achievements reflect a strong grasp of digital logic design principles and a solid foundation in object-oriented system development using UML, showcasing his versatility across both hardware and software domains. In recognition of his dedication, he was awarded a Certificate of Appreciation by NPTEL and honored with the title of "NPTEL Enthusiast" as well as "NPTEL Discipline Star." These accolades highlight his consistent engagement with NPTEL's rigorous certification programs and his pursuit of academic and professional excellence. His achievements serve as an inspiration to peers and contribute significantly to the department's vision of fostering a culture of lifelong learning and interdisciplinary expertise.

4.International Journals

1. Dr. S .V.Padmavathi has published a paper titled **"**Intelligence Based Controlling Models for Effective Power Tracking and Voltage Enhancemens**"** in the Journal of Information and Emerging Science.The paper, indexed in Scopus, was published in Feb 2025**.**

2. Dr. S .V.Padmavathi has published a paper titled **"** A Solar PV Integrated UPQC to Enhance Power Quality Using SEA Gull ANFIS Algorithm**"** in the Journal of Information and Informatica. The paper, indexed in Quartile 4 Scopus, was published in Feb 2025**.**

3. Dr.G.Srinivas has published a paper titled **"** Optimizing power quality and placement of EV charging stations in a DC grid with PV-BESS using hybrid DOA-CNN approach**"** in the Journal of Information and Electrical Power Systems research Q1 scopus indexed the paper, indexed in Quartile 1 Scopus ELSEVIER volume 245, was published in March 2025.

4. Dr.G.Srinivas has published a paper titled **"**Integrated PV systems with enhanced Intelligent control strategy for griddynamic performance**"** in the Journal of Information and Energy Q1 scopus indexed The paper, indexed in elsevier ,volume 332 Q1scopus at the international level, was published in June 2025 Online**.**

5. Dr Md. Masood Ahmad has published a paper titled "Performance analysis parallel prefix adders developed with field programmable gate array technology**"** in the Journal of Information and international journal on reconfigurable and embedded system (IJRES0) Q4 scopus at the international level, was published in March 2025

6. Mr K.Sathish has published a paper titled "Performance Optimal Feature Selection-based Face Liveness Detection using Fused Long Short-Term Memory with Gated Recurrent Unit" in the Journal of Information and International Journal of Image and Graphics Q3 scopus at the international level, was published in Feb 2025

Delegates Visited

1. Delegates Visit to EECE Department:

The Department of electrical, Electronics and Communication Engineering (EECE) at GITAM Hyderabad had the privilege of hosting two eminent personalities recently:

Prof. Kiran Kumar Kuchi, Professor, Department of Electrical Engineering, IIT Hyderabad

Dr. V. Raghunandhan, Former Secretary, Telecom Regulatory Authority of India (TRAI)

A Delegates visit to Department of EECE, School of technology, GITAM Hyderabad campus provided an enriching experience for both faculty and students through expert talks, interactive sessions, and a lab walk through. Prof. Kiran Kumar Kuchi delivered a compelling session on next-generation wireless communication, highlighting cutting-edge research areas in 5G and beyond. His talk emphasized the importance of interdisciplinary exploration and innovation in the telecom domain. Dr. V. Raghunandhan provided valuable insights into telecom policy and regulatory frameworks, bridging the gap between industry practices and academic understanding.

The event included interactive engagements where delegates encouraged students to pursue higher studies and interdisciplinary research. A vibrant Q&A session enabled students to delve deeper into current trends in IoT, spectrum management, and telecom regulations, fostering a spirit of inquiry and engagement. During the lab walkthrough, the visitors explored the Department of EECE's state-of-the-art laboratories and offered constructive feedback to further enhance hands-on learning experiences.

The visit also paved the way for future collaboration with IIT Hyderabad and industry professionals. Discussions included organizing guest lectures, workshops, and joint research projects, aimed at strengthening the academic ecosystem and expanding opportunities in the telecom and IoT sectors.

Industrial Visits

1.Industrial Visit to Advanced Systems Laboratory (ASL), DRDO.

Visit To: Advanced Systems Laboratory (ASL), DRDO
Location: Kanachana bagh, Hyderabad Telangana
Date of Visit : 19-03-2025
Organized By : EECE Department
Faculty : Prof T. Madhavi and Prof P. Trindha rao

A team from our department visited the Advanced Systems Laboratory (ASL), a premier DRDO research establishment in Hyderabad, to gain valuable insights into India's indigenous defense capabilities. ASL plays a pivotal role in the design and development of strategic missile systems such as the Agni and K-series, as well as advanced propulsion, guidance, and re-entry technologies. The visit began with a warm welcome and an introductory briefing on DRDO's mission and ASL's contributions to national defense. A detailed technical presentation showcased ASL's flagship projects and highlighted innovations in missile technology, including solid propulsion systems, advanced navigation mechanisms, and re-entry vehicle design.

Participants were given a guided tour (subject to clearance) of selected R&D labs, offering a rare glimpse into the high-security defense research infrastructure. This was followed by an interactive session with senior DRDO scientists, where attendees engaged in insightful discussions on research challenges, interdisciplinary collaboration, and career opportunities in defense technology. The visit provided firsthand exposure to advanced R&D processes such as simulation, modeling, prototyping, and rigorous testing. Participants developed a strong appreciation for the role of DRDO in ensuring strategic self-reliance under the 'Make in India' initiative. The structured approach to large-scale defense projects also offered learnings in systems engineering and project management.

2.Industrial Visit to Engineering Staff College of India (ESCI), Hyderabad

Location: Old Bombay Road, Gachibowli, Hyderabad Telangana
Date of Visit : 07-01-2025
Organized By : EECE Department
Faculty : Dr. K. Manjunatha Chari (Professor)

A team from our department visited the Engineering Staff College of India (ESCI), Hyderabad, on April 10, 2025. ESCI, an autonomous institution under the Institution of Engineers (India), is a premier training and research center focused on enhancing the technical and managerial capabilities of professionals across engineering and allied sectors.

The visit aimed to familiarize participants with ESCI's mission of continuing professional development through industry-aligned training programs, applied research, and consultancy services. The agenda included an introductory session by ESCI officials, technical presentations on emerging technologies such as Artificial Intelligence, Internet of Things (IoT), Smart Infrastructure, and Renewable Energy, followed by a campus tour and interactive session with expert faculty and professionals. Participants explored ESCI's modern infrastructure, including ISO/NABL-accredited laboratories, training halls, simulation centers, and its convention facility. They also gained insight into ESCI's applied research initiatives, industry collaborations, and national contributions in areas like rural water supply, energy systems, and civil project management.

The interaction with faculty and industry experts offered a practical understanding of real-world engineering challenges and solutions. Participants appreciated ESCI's integration of cutting-edge technologies into its curriculum and its alignment with national missions like Make in India, Digital India, and Smart Cities. The visit was not only informative but also inspiring, encouraging attendees to pursue lifelong learning, innovation, and leadership in their respective fields. It emphasized the value of continuous professional upskilling and showcased how academic institutions can effectively collaborate with industry to drive sustainable national development. The visit concluded with a group photo and feedback session, marking a successful and memorable learning experience for all participants.

3. Industrial visit to **Parker Hannifin India private limited**

Date of visit: 19-03-2025

Location:IDA patancheru

Coordinated by: Balineni Goverdhan Business Unit Manager.

Team members Visited: Dr.G.Srinivas, Dr. S. Chandrasekhar,
A.Sambhasiva rao, D.Ramesh, B. Prasad, V.Shiva Prasad

Objective of the Industrial Visit: Strengthening Academic-Industry Interface

The primary objective of the faculty industrial visit was to enhance academic understanding through direct exposure to industry practices and operational workflows. By observing real-time industrial processes, the visit aimed to bridge the gap between academic instruction and evolving industry trends, thereby enabling faculty to align curriculum and pedagogy with current technological advancements. The visit offered valuable insights into the complete process flow within the industry, allowing faculty to analyze conventional methods and explore the integration of modern research and innovations. This understanding is crucial for identifying areas where academic knowledge can contribute to solving practical challenges and for updating teaching methodologies accordingly.

Faculty at Parker company

A significant focus of the visit was to assess the scope for enhancing plant efficiency through suitable modernization techniques. Observing industry-standard practices firsthand empowered faculty to consider relevant case studies and examples for classroom discussion, making learning more application-oriented. Furthermore, the visit opened up avenues for collaboration in the form of student internships, industrial visits, and potential employment opportunities. It also laid the groundwork for research tie-ups and joint academic initiatives.

Overall, the visit served as an important step toward fostering stronger academic-industry partnerships, ensuring that educational practices remain relevant, dynamic, and industry-aligned.

4. Industry visit to Mahindra and Mahindra company

Date of visit: 22-04-2025

Company name: Mahindra and Mahindra company

Team members Visited: Prof P. Trinatha Rao, Dr.N.Shyam Sunder Sagar, Mr.B.Santosh Kumar , Mr. M. Raghupathy and Dr P. V. Rama Krishna

A team of faculty members from the Department of electrical, electronics and communication, GITAM School of Technology, Hyderabad, had the opportunity to visit the **Mahindra & Mahindra Automotive Manufacturing Plant** in Zaheerabad on 22-04-25. This initiative was undertaken to enhance industry-academia interaction, gain insights into real-time manufacturing processes, and align academic practices with current industrial standards.

Dean Prof.V. Rama Sastry and faculty at Mahindra and Mahindra Zaheerabad unit

Dean Prof V. Rama Sastry and faculty at Mahindra and Mahindra Zaheerabad assembly unit

The Zaheerabad unit is one of Mahindra & Mahindra's major manufacturing facilities, known for producing a range of commercial and utility vehicles. During the visit, faculty members were exposed to various sections of the plant, including chassis assembly, body shop, paint shop, and final vehicle assembly. Detailed briefings and on-floor observations enabled the faculty to understand the company's lean manufacturing practices, use of automation, quality control measures, and sustainability initiatives.The interaction with the plant's engineering and production teams offered valuable insights into emerging trends in automotive manufacturing, such as electric vehicle (EV) integration, smart factory concepts, and advanced robotic systems. It also highlighted the significance of interdisciplinary knowledge and the application of IoT, AI, and data analytics in optimizing production workflows.

This visit not only strengthened the understanding of faculty in modern industrial practices but also laid a foundation for future collaboration in terms of **student internships, live projects, and joint research opportunities**. The insights gained will be instrumental in enriching classroom teaching, curriculum development, and guiding students towards industry-relevant skills.Such visits bridge the gap between theoretical knowledge and practical application, enabling institutions like GITAM to produce industry-ready graduates aligned with future technological needs.

5.Industry visit to Silicon labs

Date of visit: 23-04-2025

Company name: Silicon labs, Hyderabad

Team members Visited: Dr Md Masood ahmad, Mr M Naresh Kumar and Mr B. Balaji naik

A faculty team from GITAM School of Technology, Hyderabad, visited **Silicon Labs**, a global leader in secure, intelligent wireless technology, at its Hyderabad R&D center. The visit aimed to enhance academic-industry interaction and gain exposure to current trends in semiconductor innovation, IoT system design, and low-power wireless technologies. The delegation included faculty members from the EECE, representing VLSI, embedded systems, and IoT specializations. The visit began with a detailed presentation by Silicon Labs engineers, offering insights into the company's focus areas—particularly its cutting-edge work in wireless SoCs, microcontrollers, and integrated solutions for smart home, industrial automation, and medical applications.

Faculty members were taken on a guided tour of the facility, which showcased state-of-the-art lab infrastructure used for silicon validation, system integration, and product prototyping. Special emphasis was placed on the company's design methodology, energy-efficient protocols like Zigbee, Z-Wave, and Bluetooth Low Energy (BLE), and the importance of security in wireless applications.

Faculty of EECE at Silicon labs

Discussions during the visit highlighted potential areas for collaboration, including internships, curriculum alignment with industry needs, and research projects in areas like secure embedded systems, ultra-low-power IC design, and AI-integrated edge devices. This visit provided valuable exposure to real-world design challenges and solutions in the semiconductor industry and inspired faculty to incorporate industry-relevant practices into their teaching and research. It also opened pathways for building long-term partnerships to bridge the gap between academia and industry in emerging technologies.

The faculty expressed sincere appreciation to Silicon Labs for their hospitality and knowledge-sharing and looks forward to collaborative initiatives that will benefit both students and researchers in the VLSI and IoT domains.

In addition to above mentioned companies the faculty visited companies like, Nucon aerospace, Toshiba and Ganapathy sugar factory etc. The complete list of industry visits completed from Jan-June 2025 is consolidated in the table1.

Table1: The consolidated list of faculties visited various industries.

Department of EECE, GST, Hyderabad Faculty data				
S.No.	Name of the Faculty	Industry visits completed (Jan-June25)	Details of Industry visited	Date of Visits
1	Dr. T. Madhavi	1	1)Advanced Systems Laboratory (ASL), DRDO	1)19-03-2025
2	Dr. K. Manjunatha Chari	2	1) ESCI, Hyderabad 2)IIT Hyderabad	1) 07-01-2025 2) 21-04-2025
3	Dr. P.TrinathaRao	3	1)Advanced Systems Laboratory (ASL), DRDO, 2)Ordinance Factory, Medak. IIT, Hyderabad, 3)Mahindra & Mahindra, Zaheerabad	1)19-03-2025 2) 21-04-2025 3) 22-04-2025
4	Dr. Prasantha R Mudimela	1	1) Nucon Aerospace	1) 17-01-2025
5	Dr. Shantanu Saha	2	1) IIT Kharagpur 2) Defence Research and Development labs	1)21-03-2025 2) 28-03-2025
6	Dr. P.V.Ramakrishna	2	1) T Works 2) Mahindra and Mahindra	1) 18-03-2025 2) 22-04-2025
7	Dr. S.V.Padmavathi	1	1)T works	1)18-03-2025
8	Dr. Md.Masood Ahmad	3	1)Silicon labs 2) DLRL 3) PARKER	1)23-04-2025 2)25-04-2025 3)13-05-2025
9	Dr.N.Shyam Sunder Sagar	2	1.Mahindra and Mahindra 2.IIT H	1)22-04-2025 2)21-04-2025
10	Dr. G.Srinivas	2	1)Parker Hannfin limited .2)RCI DRDO	1)19-03-2025 2) 28-03-2025
11	Dr.D. Anitha	1	1)BHEL, Hyderabad	1) 04-05-2025

12	Dr.K.Praveen Kumar	1	1) IIT-Hyderabad	1) 21-04-2025
13	Dr.Chandrasekhar Sirigiri	1	1)Parker Hannfin limited	1) 19-03-2025
14	Ms. M.Bindu Priya	2	1) T works 2) IMD-Hyderabad	1)18-03-2025 2)24-04-2025
15	Mr. B. Prasad	1	1) Parker Hannifin India Pvt.Ltd	1)19-03-2025
16	Mr.Ramesh Daravath	2	1) Parker Hannfin Ltd, Patancheru 2) IMD begumpet	1)19-03-2025 2)24-04-2025
17	Mr. B.Balaji Naik	1	1) Silicon LABS, Hydereabad	1) 23-04-2025
18	Ms. E. ArunJyothi	1	1)Toshiba	1)20-03-2025
19	Mr.B.Santosh Kumar	3	1) Varun beverages ltd., Sangareddy. 2) Mahindra and Mahindra Automotive Limited 3)Ganapathy Sugar Industries,Sangareddy .	1) 13-03-2025 2) 22-04-2025 3)02-05-2025
20	Mr. M.Naresh Kumar	1	1) Silicon LABS, Hydereabad	1) 23-04-2025
21	Mr. P. Nagaraja	2	1) Varun beverages ltd., Sangareddy 2) Ganapathy Sugar Industries,Sangareddy .	1)03-13-2025 2) 02-05-2025
22	Mr. Mariya Dasu Mathe	2	1) Varun beverages ltd., Sangareddy 2) Ganapathy Sugar Industries,Sangareddy .	1) 13-03-2025 2)02-05-2025
23	Mr.S.Srinivasulu	1	1) BHEL, Hyderabad	1) 04-05-2025
24	Mr. M. Raghupathy	2	1) Mahindra and mahindra zahirabad	1)22-04-2025
25	Mr.S.Ram Prasad	1	1)Visited Ganapathy Sugar indusries, Sangareddy.	1)05-02-2025
26	Mr.N.Prashanth	1	1) IMD	1)24-04-2025

27	Mr.T.Srinivas Rao	2	1)Varun beverages ltd 2)Keysight Technologies	1)13-03-2025 2)17/04/2025
30	Mr.A.Sambasiva Rao	1	1)Parker Hannfin limited	1)19-03-2025
31	Mr.V.Shiva Prasad Nayak	2	1)Parker Hannfin limited 2) IMD	1)19-03-2025 2)24-04-2025
32	Mr. Karne Sathish Kumar	1	1) IMD	1)24-04-2025
33	Mr. Rathlavath Chandru	2	1)DRDO, Hyderabad 2) Ganapati Sugarcane Industries Pvt Ltd	1) 28-03-2025 2)02-05-2025
34	Mr.B.Suresh Kumar	1	1)T works	1) 18-03-2025
35	Dr. Bighnaraj Panda	1	Defence Research and Development Organisation (DRDO)	1)28-03-2025

Student Industry internships

During the academic year 2024–25, students from the Department of Electrical, Electronics and Communication Engineering actively participated in industry internships across several reputed organizations, showcasing their technical competencies and enhancing their real-world skills. A total of **23 students** secured internships in **leading companies and institutions**, many of which offered attractive monthly stipends, reflecting the high demand for skilled ECE talent.

Prominent among the recruiters was **Schneider Electric**, which onboarded **3 students** with a monthly stipend of ₹25,000. **Axis Energy** and **Rinex Technologies Pvt. Ltd.** recruited **4 and 5 students respectively**, offering similar compensation. **KPIT Technologies** and **ARIQT** provided internships to individual students with stipends of ₹25,000 and ₹14,000 respectively. **Accenture** absorbed **3 students** at ₹20,000 per month, while **Survlens** offered internships to **5 students** with a stipend of ₹15,000. Notably, **IIT-Hyderabad** also extended internship opportunities to 1 **student**, underlining the academic excellence of the department.

These internships not only offered students financial support but also served as a gateway to hands-on experience, industrial exposure, and potential pre-placement offers. The department continues to support and encourage students in securing such prestigious opportunities that bridge the gap between academia and industry.

Students' industry internships list is presented in the table2.

Table2: Students industry internships list

S.No	Name Of the Student	Regd .No	Branch	Year of Pass	Name Of the Employer
1	S P D V Hari Murali Krishna	HU21EECE0100145	ECE	2025	Axis Energy
2	Jilla Abhishek	HU21EECE0100193	ECE	2025	Axis Energy
3	Gurpreet Singh Bawa	HU21EECE0100236	ECE	2025	Axis Energy
4	K Rahul Sai	HU21EECE0100576	ECE	2025	Axis Energy
5	G Anirudh	HU21EECE0100130	ECE	2025	Survlens
6	Gadiya Sumanth Kumar	HU21EECE0100136	ECE	2025	Survlens
7	Kerelli Aravind Reddy	HU21EECE0100178	ECE	2025	Survlens
8	Vadla Amshudhar	HU21EECE0100346	ECE	2025	Survlens

9	Peddammagari Nikitha	HU21EECE0100383	ECE	2025	Survlens
10	Palakurthi Vamshi	HU21EECE0100134	ECE	2025	KPIT
11	Sumanam Krittika Sri Saradha	HU21EECE0100132	ECE	2025	Schneider Electric
12	Gone Deekshitha	HU21EECE0100203	ECE	2025	Schneider Electric
13	K M Ramchandra	HU21EECE0100513	ECE	2025	Schneider Electric
14	Bothsa Vanshika Sai	HU21EECE0100296	ECE	2025	ARIQT
15	Cheerla Omesh Sagar	HU21EECE0100239	ECE	2025	Accenture
16	Salma Nowsheen	HU21EECE0100122	ECE	2025	Accenture
17	Mamritha M	HU21EECE0100508	ECE	2025	Accenture
18	Ravella Maheshbabu	HU21EECE0100131	ECE	2025	Rinex Technologies
19	Gaddam Sreya Jayadheer	HU21EECE0100238	ECE	2025	Rinex Technologies
20	Kakkireni Manikanta	HU21EECE0100311	ECE	2025	Rinex Technologies
21	Anusha	HU21EECE0100579	ECE	2025	Rinex Technologies
22	Jinka Srujana	HU21EECE0100597	ECE	2025	Rinex Technologies
23	T Sai priya	HU21EECE0100217	ECE	2025	IIT Hyderabad

Department MOU's

The MoU between GITAM University, Hyderabad Campus and Phytech Embedded Pvt. Ltd.

GITAM (Deemed to be University), Hyderabad Campus, entered into a Memorandum of Understanding (MoU) with Phytec Embedded Pvt. Ltd., a leading embedded systems solutions provider, to foster industry-academia collaboration in the field of Embedded Systems, IoT, AI, and Industry 4.0 applications.

Purpose and Objectives:

To bridge the gap between academic curriculum and industry requirements.

To promote joint research, training, and skill development initiatives in embedded systems and related technologies.

To establish centers of excellence/labs equipped with Phytec hardware for practical learning.

To facilitate internships and industrial visits for students at Phytec's facilities.

To organize workshops, guest lectures, and faculty development programs (FDPs).

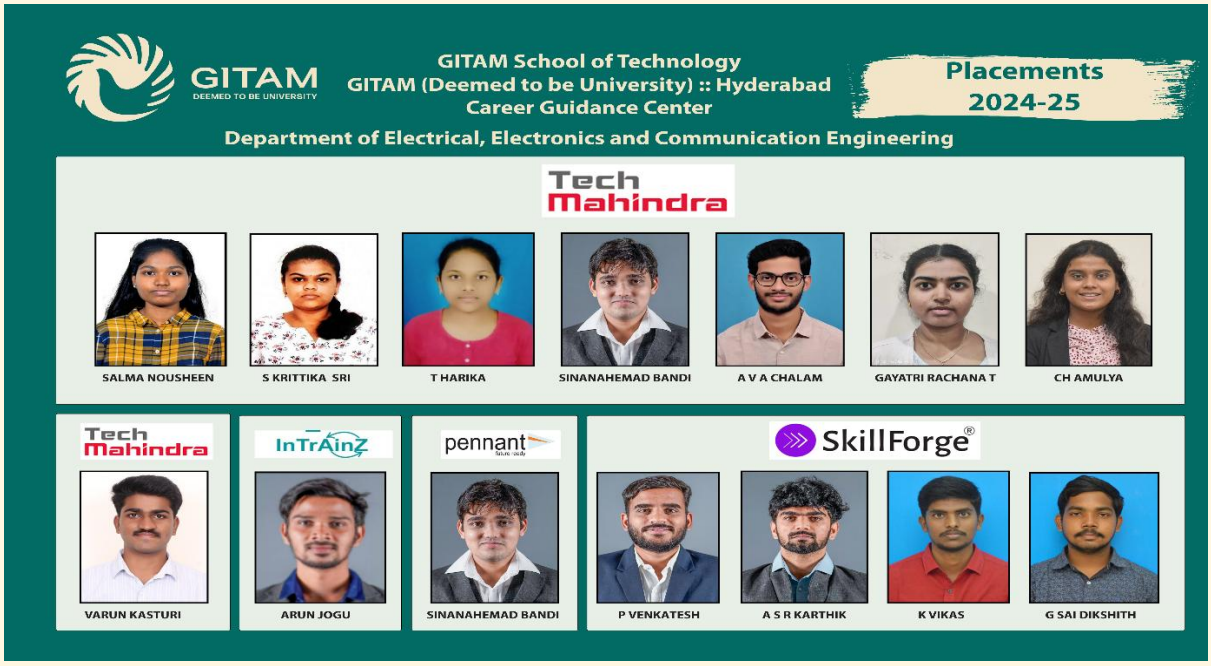
To assist in curriculum design and development aligned with industry needs.

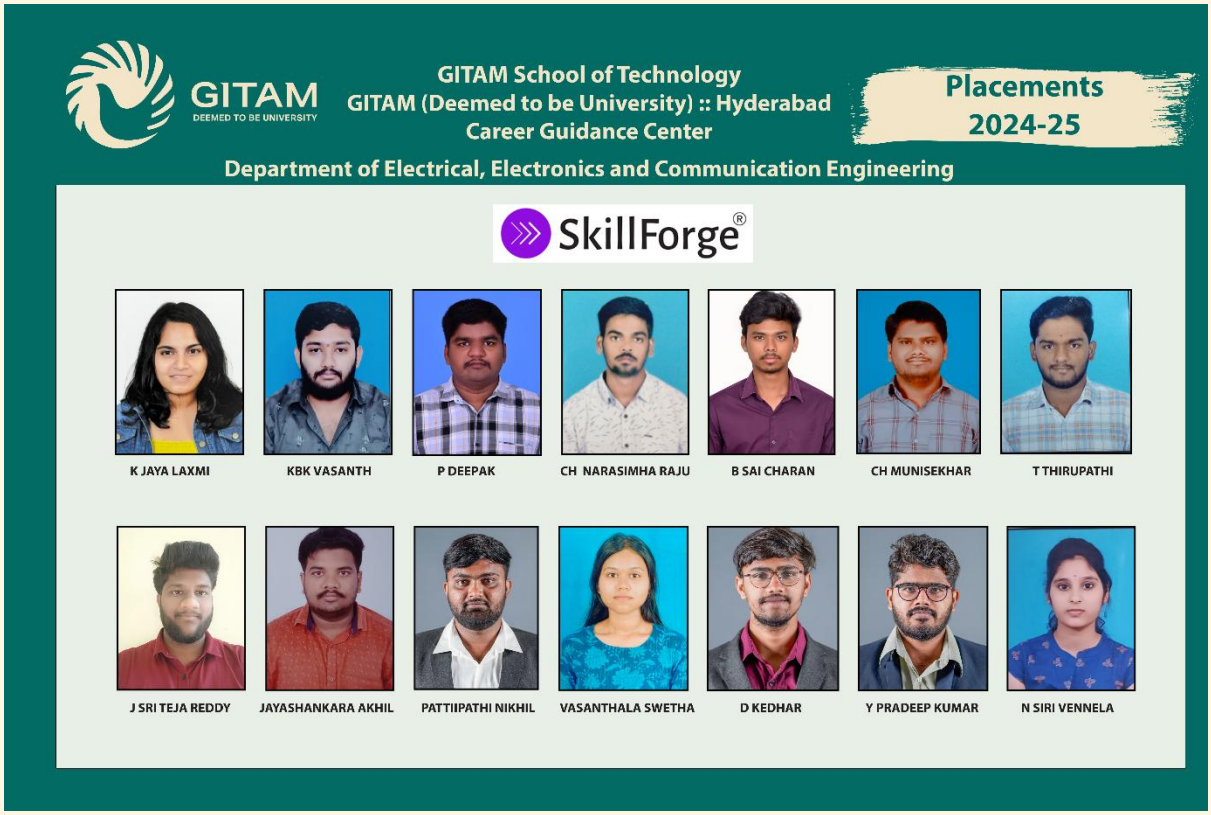
Industry Collaboration with Phytech: Fostering Innovation and Skill Development

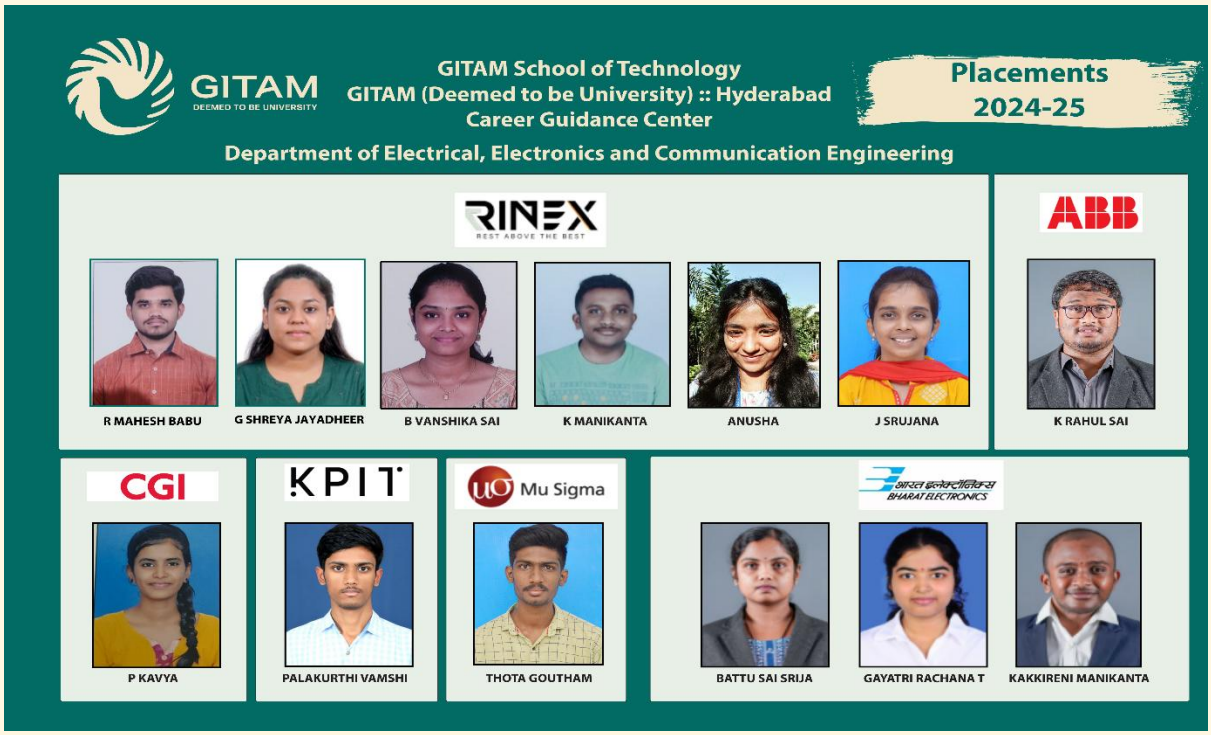
The department has initiated a promising collaboration with Phytech, aiming to bridge the gap between academia and industry in the field of embedded systems and IoT. The partnership focuses on four key areas: training, student engagement, faculty development, and infrastructure enhancement. Under training and workshops, hands-on sessions will be organized on ARM Cortex, Linux-based embedded systems, and IoT platforms, along with participation in seminars and technical events. For student engagement, Phytech will offer internship opportunities, project guidance for final-year and capstone projects, and conduct campus recruitment drives.

To support faculty empowerment, dedicated Faculty Development Programs (FDPs) and research collaboration opportunities will be facilitated. In terms of infrastructure development, Phytech will assist in establishing advanced embedded and IoT labs, providing tools, boards, licensed software, and training materials. This collaboration is expected to enhance student employability by offering practical exposure to real-world embedded applications. It also aims to encourage collaborative research, prototype development, and adoption of industry-aligned teaching practices. Ultimately, the partnership seeks to create a sustainable ecosystem within the department, fostering innovation, entrepreneurship, and product development aligned with current and emerging industry needs.

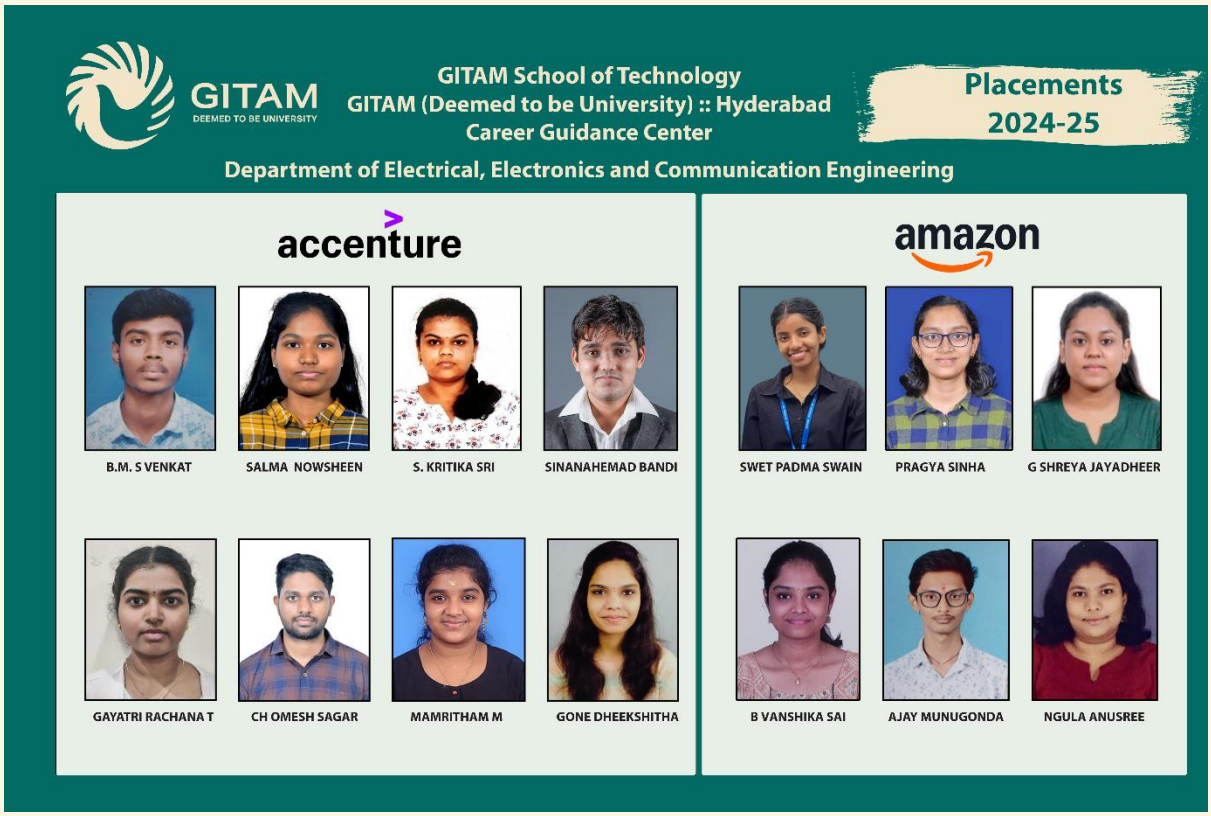
placements


GITAM
DEEMED TO BE UNIVERSITY
GITAM School of Technology
GITAM (Deemed to be University) :: Hyderabad
Career Guidance Center
Placements
2024-25
Department of Electrical, Electronics and Communication Engineering
Tech Mahindra
SALMA NOUSHEEN
S KRITTIKA SRI
T HARIKA
SINANAHEMAD BANDI
A V A CHALAM
GAYATRI RACHANA T
CH AMULYA
Tech Mahindra
VARUN KASTURI
InTrAinZ
ARUN JOGU
pennant
SINANAHEMAD BANDI
SkillForge
P VENKATESH
A S R KARTHIK
K VIKAS
G SAI DIKSHITH


GITAM
DEEMED TO BE UNIVERSITY
GITAM School of Technology
GITAM (Deemed to be University) :: Hyderabad
Career Guidance Center
Placements
2024-25
Department of Electrical, Electronics and Communication Engineering
SkillForge
K JAYA LAXMI
KBK VASANTH
P DEEPAK
CH NARASIMHA RAJU
B SAI CHARAN
CH MUNISEKHAR
T THIRUPATHI
J SRI TEJA REDDY
JAYASHANKARA AKHIL
PATTIIPATHI NIKHIL
VASANTHALA SWETHA
D KEDHAR
Y PRADEEP KUMAR
N SIRI VENNELA


GITAM
DEEMED TO BE UNIVERSITY
GITAM School of Technology
GITAM (Deemed to be University) :: Hyderabad
Career Guidance Center
Placements
2024-25
Department of Electrical, Electronics and Communication Engineering
RINEX
R MAHESH BABU
G SHREYA JAYADHEER
B VANSHIKA SAI
K MANIKANTA
ANUSHA
J SRUJANA
ABB
K RAHUL SAI
CGI
P KAVYA
KPIT
PALAKURTHI VAMSHI
Mu Sigma
THOTA GOUTHAM
BHARAT ELECTRONICS
BATTU SAI SRIJA
GAYATRI RACHANA T
KAKKIRENI MANIKANTA


GITAM
DEEMED TO BE UNIVERSITY
GITAM School of Technology
GITAM (Deemed to be University) :: Hyderabad
Career Guidance Center
Placements
2024-25
Department of Electrical, Electronics and Communication Engineering
axis
Energizing a Sustainable Tomorrow
J ABHISHEK
S P D V MURALI KRISHNA
GURPEETH SIGH
RAHUL SAI
cognizant
ABHIJIT ANIL
VIRIVINTI VAMSHI
tcs
TATA CONSULTANCY SERVICES
THIPPARAM HARIKA
Survlens
G ANIRUDH
G SUMANTH KUMAR
K ARAVIND REDDY
V AMSHUDHAR
P NIKITHA
ARIQT
INTERNATIONAL
B VANSHIKA SAI
Prodapt
P ABHI RAM


GITAM
DEEMED TO BE UNIVERSITY
GITAM School of Technology
GITAM (Deemed to be University) :: Hyderabad
Career Guidance Center
Placements
2024-25
Department of Electrical, Electronics and Communication Engineering
accenture
B.M. S VENKAT
SALMA NOWSHEEN
S. KRITIKA SRI
SINANAHEMAD BANDI
GAYATRI RACHANA T
CH OMESH SAGAR
MAMRITHAM M
GONE DHEEKSHITHA
amazon
SWET PADMA SWAIN
PRAGYA SINHA
G SHREYA JAYADHEER
B VANSHIKA SAI
AJAY MUNUGONDA
NGULA ANUSREE


GITAM
DEEMED TO BE UNIVERSITY