GITAM
DEEMED TO BE UNIVERSITY

WIRELINE

Connecting EECE

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

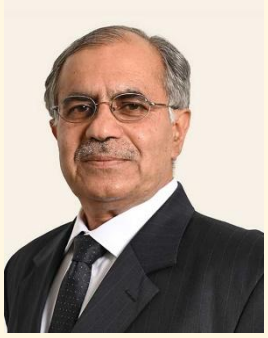
"**WIRELINE**" is the E-Magazine of the Department of Electrical, Electronics, and Communication Engineering at the School of Technology, GITAM University, Hyderabad Campus. It provides a great opportunity for the students and faculty of the Department to share their knowledge, literature, talents, achievements, 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 Aatmanirbhar 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 endeavour for continued success and a promising future ahead.

CONTENTS

TECHNICAL EVENTS

HAVANA Tech Fest 2025: A Celebration of Innovation and Excellence

DATE: February 27-28, 2025

The HAVANA Tech Fest conducted on 27 and 28 February 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.

Introduction:

In a world driven by innovation, HAVANA Tech Fest 2025 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.

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.



Day 1 Highlights:

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 included:

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.




Day 2 Highlights:

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

Events included:

Protoverse – A showcase of prototype projects, bringing cutting-edge technological solutions to the forefront.

devBattle – A rapid-fire coding contest testing developers' agility in problem-solving.

Replica – A challenge where participants designed and replicated real-world engineering models with precision.

InkSpire – A paper presentation competition where students showcased their research and technical insights on emerging technologies.

Post a Pitch – A poster presentation event that allowed participants to visually represent their innovative ideas and research findings to experts and peers.

The grand finale of HackEra saw teams unveiling their innovative solutions, developed through sleepless nights of coding and problem-solving.

Planning and Coordination:

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.

Execution:

Day 1 commenced with a grand inauguration, followed by a series of high-intensity tech competitions.
Day 2 was immersed in intellectual and entrepreneurial engagement, culminating in HackEra's final presentations**.**
Every event was executed flawlessly, ensuring a rewarding and enriching experience for all participants.

Student Engagement and Interaction:

A hallmark of HAVANA'25 was the interactive platform it provided for students to:

Engage with industry professionals and gain insights into emerging technological trends. Participate in hands-on competitions that tested their technical and problem-solving skills. Expand their networks by connecting with peers, mentors, and potential recruiters. Attend workshops and discussions, gaining deeper knowledge in their areas of interest.

Impact of HAVANA'25:

The impact of HAVANA Tech Fest 2025 extended far beyond the two-day event:

1. Participants were exposed to cutting-edge technologies and real-world challenges.
2. Students refined their technical, programming, and problem-solving skills.
3. The fest bridged academia and industry, opening doors to career opportunities and collaborations.
4. The event inspired a community of young innovators, fostering collaboration and knowledge exchange.

Media Coverage and Documentation:

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 Tech Fest 2025 was not just an event—it was an ecosystem of innovation, learning, and collaboration. With over 1000+ students participating, the festival ignited a firestorm of creativity and technological excellence.

Beyond the competitions and awards, HAVANA'25 fostered a culture of intellectual growth, problem-solving, and interdisciplinary collaboration. It provided a platform for students to showcase their skills, push boundaries, and create ground-breaking solutions. The relationships built, experiences shared, and knowledge gained will continue to inspire students in their academic and professional journeys.

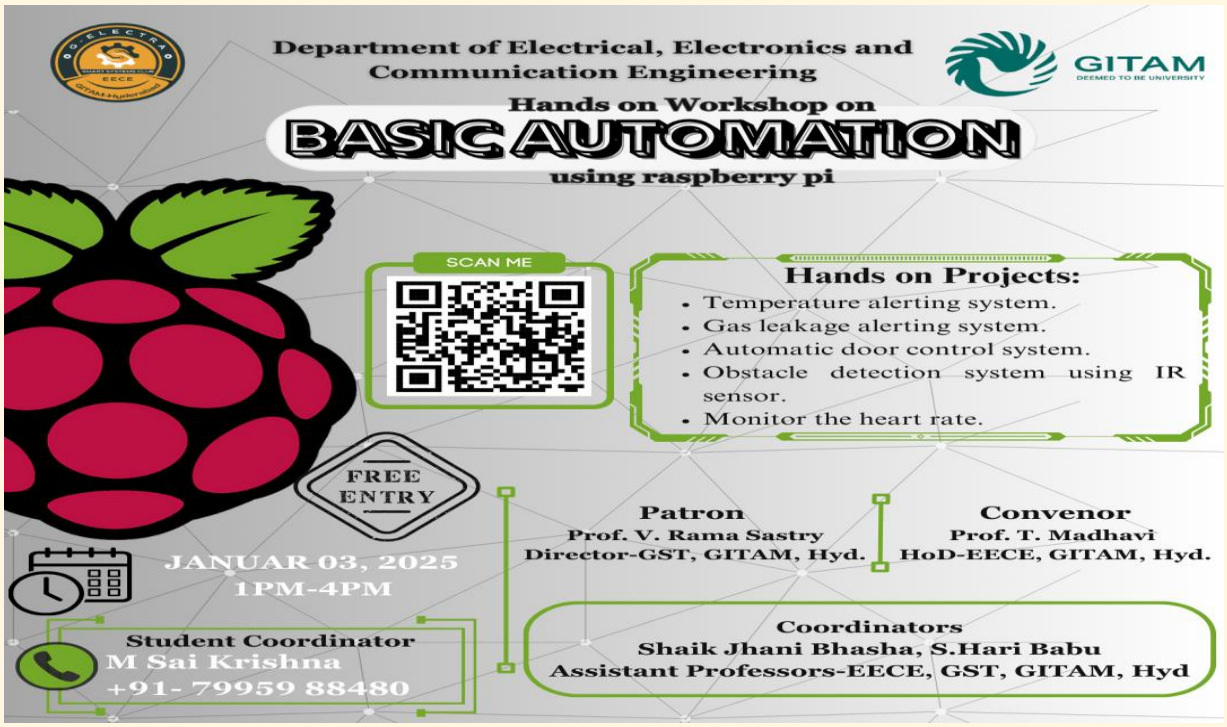
As we close the chapter on this landmark edition, we look forward to HAVANA 2026, where we aim to push the frontiers of technology, foster even deeper collaborations, and inspire the next generation of innovators.

With GITAM University and G-Electra (Smart Systems Club) leading the charge, the future of technological innovation shines brighter than ever.

See you at HAVANA 2026!

Work shops

(i) Hands-on workshop Basic Automation using Raspberry Pi

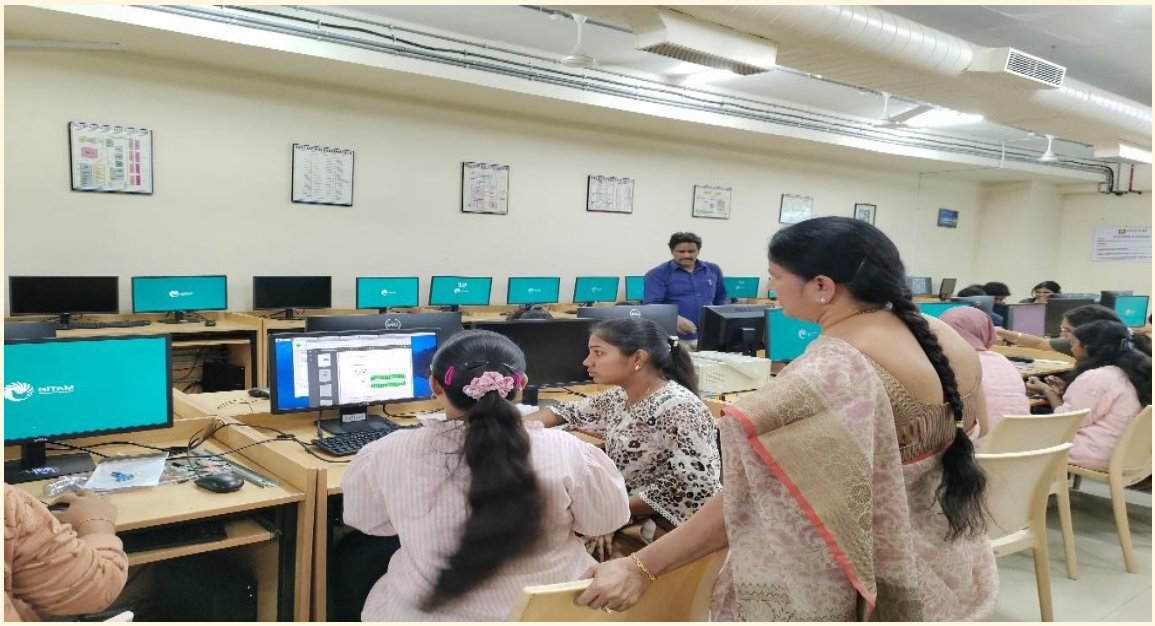


Hands-on workshop Basic Automation using Raspberry Pi:

A hands-on workshop was organized by the department of EECE and G-Electra club on January 3, 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. Ramasasry.

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.



(ii) The Department of EECE has conducted 3-day FDP on "EV Technologies3-day FDP on "EV Technologies: Development's and challenges" (22 – 24 January 2025):

The Department of EECE has conducted a 3-day FDP on "EV Technologies: Developments and

challenges" from 22-24 January 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

EV Technologies: Developments and Challenges

22 - 24 Jan 2025

EECE Department, GST, GITAM Deemed to be University (NAAC A++ Accredited), Hyderabad

Venue:Room.No. J211, Seminar Hall

Day& Date	09:00 – 11:00		Tea Break	11.30 –1:00	1-1.30	Lunch Break	14:00 – 16:00
Wednesday 22-01-2025	Registration & Inauguration (9.00-9.30)	Topic: **Introduction to EV technology and components, Motors Suitable for EV Applications** Prof. (Dr.) K. Raghavan Professor, Dept of EEE IIT Gandhinagar		Topic: **Control of BLDC and PMSM for Electric Vehicle Applications** Prof. (Dr.) K. Raghavan Professor, Dept of EEE IIT Gandhinagar	Quiz-1		Topic: **Challenges in EV and possible research areas, How NI can help to tackle the EV challenges** Mr. Rajesh Ganeshan Senior Application Engineer National Instruments
Thursday 23-01-2025	Topic: **Types of Electric Vehicles, Electric vehicle modelling** Prof. (Dr.) B. Venkatesham Professor, Dept of EEE IIT Hyderabad			Topic: **Vehicle dynamics and power train mechanism** Prof. (Dr.) B. Venkatesham Professor, Dept of EEE IIT Hyderabad	Quiz-2		Topic: **Power quality, vehicle to grid and grid to vehicle connection, Battery management system (charging and discharging)** Mr. Mubin Anwar Sheikh R&D Manager Technical EV 3d, Hyderabad
Friday 24-01-2025	Topic: **EV Motor Control Modelling using MATLAB, Model-Based Design for Electric Vehicle** Mr. K.Sudharson Senior Development Engineer VI Micro Systems, Chennai			Topic: **Component sizing and designing control algorithm** Mr. K.Sudharson Senior Development Engineer VI Micro Systems, Chennai	Exam-1		Topic: **AC and DC Electric Vehicle charging protocol, Real time implementation** Prof. Sridhar Professor, Dept of EEE Mahindra University, Hyderabad


Electric Vehicle
Modelling
(Mechanical
Design)

(iii) PHYTEC Embedded workshop

PHYTEC Embedded is a global leader in embedded systems solutions, renowned for its expertise in designing and manufacturing high-quality System-on-Modules (SOMs), Single-Board Computers (SBCs), and custom embedded electronics tailored for industrial applications. Established in Mainz, Germany in 1985, PHYTEC has steadily expanded its operations with subsidiaries in the USA, France, China, and India, becoming a trusted partner for original equipment manufacturers (OEMs) worldwide.

PHYTEC's core business revolves around providing modular embedded hardware platforms that help companies accelerate their product development, reduce engineering risks, and achieve faster time-to-market. Its SOM portfolio spans across advanced processors from ARM Cortex-A and Cortex-M series to x86 architectures, sourced from leading semiconductor vendors such as NXP, Texas Instruments, STMicroelectronics, and Renesas. By offering production-ready hardware backed by long-term availability, PHYTEC enables customers to focus on their application-specific innovation rather than low-level hardware complexities.

In addition to hardware, PHYTEC delivers robust software support, offering Linux, Android, Windows IoT, and RTOS BSPs (Board Support Packages), complemented by comprehensive tools for bootloader configuration, device tree customization, and peripheral drivers. Their engineering teams also provide customized software integration, enabling seamless transitions from prototype to mass production.

PHYTEC is distinct for its complete end-to-end approach. Beyond off-the-shelf products, it offers tailored hardware design services, helping customers develop carrier boards and custom form factors that precisely fit their application requirements. This design flexibility is backed by PHYTEC's in-house production facilities, which include state-of-the-art surface mount technology (SMT) lines, automated optical inspection, X-ray verification, and rigorous quality assurance processes. This vertical integration ensures high reliability and traceability across all production stages, supporting industries with stringent regulatory needs, such as medical devices, automotive electronics, energy systems, industrial automation, and transportation.

PHYTEC also emphasizes lifecycle management, offering extensive product longevity guarantees, change management notifications, and design revalidation services to help customers maintain regulatory compliance and mitigate obsolescence risks. These services are critical for industrial customers whose product lifespans often exceed a decade.

PHYTEC INDIA, established in Bengaluru, serves as a major R\&D and customer support hub for the Asia-Pacific region. It plays a pivotal role in hardware design, software development, and localized support, ensuring that customers in India and neighboring countries receive timely engineering assistance and scalable solutions tailored to regional requirements.

A notable strength of PHYTEC is its commitment to continuous innovation. The company actively invests in emerging technologies, including embedded vision, artificial intelligence on the edge, and Industrial IoT (IIoT). It provides evaluation kits and reference designs that enable

developers to quickly prototype smart applications involving machine learning and advanced sensor integration.

With a global workforce of over 400 professionals, PHYTEC maintains a collaborative engineering culture that blends German precision with local expertise across its branches. Its customer-centric philosophy is underpinned by decades of experience in embedded markets, making PHYTEC a preferred partner for businesses seeking dependable, scalable, and future-proof embedded solutions.

In summary, PHYTEC Embedded stands out as a comprehensive embedded systems provider, offering a unique combination of modular hardware platforms, software stacks, custom design services, and manufacturing capabilities. By addressing the full lifecycle needs of embedded product development, PHYTEC empowers its customers to bring innovative, high-performance solutions to market efficiently and reliably.

(iv)Title of the Workshop: 6-Day Faculty Upgradation Programme (FUP) - 30 Hours

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

Organized by: GITAM University, Hyderabad Campus

Duration & Venue

- **Dates:** 16-06-2025 to 23-06-2025 (6 days, 30 hours)
- **Venue:** GITAM Hyderabad Campus
- **Objectives of the Workshop**

The primary objectives of this Faculty Upgradation Programme were:

- To familiarize participants with Linux fundamentals and embedded Linux programming.
- To impart practical skills in hardware interfacing and sensor programming on embedded Linux platforms.
- To provide exposure to advanced topics such as multi-protocol gateway development and smart energy monitoring aligned with Industry 4.0.
- To enable faculty to integrate modern embedded systems and IoT concepts into academic curriculum and labs.

Workshop Schedule & Highlights

Day 1: 16-06-2025

- **09:00 – 12:00**
  Module-1: Introduction to Linux Basics & Programming
  Covered shell commands, file systems, and fundamental programming constructs in Linux.
- **14:00 – 17:00**
  Module-1: Hands-on Linux Basics & Programming
  Practical sessions on writing and executing basic programs and shell scripts.

Day 2: 17-06-2025

- **09:00 – 12:00**
  Module-2: Introduction to eLinux Porting
  Discussed cross-compilation, kernel configuration, and porting concepts.

- **14:00 – 17:00**
  Module-2: Hands-on eLinux Porting
  Hands-on practice on porting applications onto embedded Linux boards.

Day 3: 18-06-2025

- **09:00 – 12:00**
  Module-3: Introduction to HW Interface & Sensor Programming in eLinux
  Explained interfacing sensors and actuators with embedded Linux.
- **14:00 – 17:00**
  Module-3: Hands-on HW Interface & Sensor Programming
  Implemented sensor interfacing experiments on hardware boards.

Day 4: 19-06-2025

- **09:00 – 12:00**
  Module-4: Introduction to Advanced Sensor Interface Programming
  Covered multi-sensor integration and data acquisition techniques.
- **14:00 – 17:00**
  Module-4: Hands-on Advanced Sensor Programming
  Developed programs for simultaneous sensor data acquisition and processing.

Day 5: 20-06-2025

- **09:00 – 12:00**
  Module-5: Demonstration of Hands-on Project – Industry 4.0 Multi-Protocol Gateway Development
  Demonstrated gateway systems that integrate multiple industrial communication protocols.
- **14:00 – 17:00**
  Module-5: Demonstration of Hands-on Project – Smart Energy Meter and Energy Monitoring
  Showcased smart energy meter implementation with live monitoring dashboards.
- Day 6 23-06-2025

  Module_6: *Demonstration of Hands-on Projects*

Key Learnings & Outcomes

- Gained practical exposure to Linux and embedded Linux programming workflows.
- Understood hardware-software co-design principles in sensor interfacing.
- Learned about multi-protocol gateways crucial for Industry 4.0 applications.
- Acquired insights into building energy monitoring solutions which can be proposed as student projects.

(V)AI-ML Introductory Workshop

Organized by:School of Technology, Hyderabad
Department of Computer Science and Engineering

Dates: June 30th – July 1st, 2025

Workshop Agenda

Details of The Phase II AI-ML introductory workshop For the Faculty Members of Core – Engineering Departments

Schedule		Venue	A513
Phase II	June 30th - Jul 1st	**LAB**	B715

Day 1: Foundations & Domain Relevance			
Session No	**Title**	**Slot**	**Resource Person**
1	AI & ML : Foundations, Relevance and Integration in Engineering	9 -10 a.m	Dr. S Ramakrishna
2	Data Visualization	10 - 12 a.m	Dr. Mahaboob Basha Shaik
3	Setting up Python & Jupiter Notebook	2 - 3 p.m	Dr. Sreedhar

Day 2: Diving Deeper & Applications			
Session No	**Title**	**Slot**	**Resource Person**
1	CNN for Image Datasets	9 - 11 a.m	Dr. Sireesha V
2	Convolutional Neural Networks for Image Classification: A Step-by-Step Guide	11 - 12 a.m	Dr. Rajib Debnath
3	Applications of Vision-Language Models in Core Engineering Domains	2 - 3 pm	Dr.Yaswanth G

Day 1: Foundations & Domain Relevance

Session	Title	Time Slot	Resource Person
1	AI & ML: Foundations, Relevance and Integration in Engineering	9:00 – 10:00 a.m	Dr. S. Ramakrishna
2	Data Visualization	10:00 – 12:00 p.m	Dr. Mahaboob Basha Shaik
3	Setting up Python & Jupiter Notebook	2:00 – 3:00 p.m	Dr. Sreedhar

Day 2: Diving Deeper & Applications

Session	Title	Time Slot	Resource Person
1	CNN for Image Datasets	9:00 – 11:00 a.m	Dr. Sireesha V
2	Convolutional Neural Networks for Image Classification: A Step-by-Step Guide	11:00 – 12:00 p.m	Dr. Rajib Debnath
3	Applications of Vision-Language Models in Core Engineering Domains	2:00 – 3:00 p.m	Dr. Yaswanth G

Summary of Outcomes

1. **Conceptual Understanding:**
   - Developed a strong foundation in the basic principles of Artificial Intelligence (AI) and Machine Learning (ML), particularly their relevance and integration within core engineering disciplines.
2. **Practical Exposure:**
   - Learned to set up Python environments and utilize Jupyter Notebooks, enabling hands-on experimentation with ML concepts.
   - Understood essential data visualization techniques to analyze engineering datasets effectively.
3. **Deep Learning Insights:**
   - Gained an introductory yet practical understanding of Convolutional Neural Networks (CNNs), including step-by-step methodologies for image classification tasks.
4. **Emerging Applications:**
   - Explored real-world applications of vision-language models and how these cutting-edge AI technologies can solve domain-specific problems in core engineering areas.
5. **Interdisciplinary Perspective:**

- The workshop bridged computer science concepts with core engineering applications, equipping faculty members to adopt and promote AI-ML methods in their respective fields.

Concluding Remarks

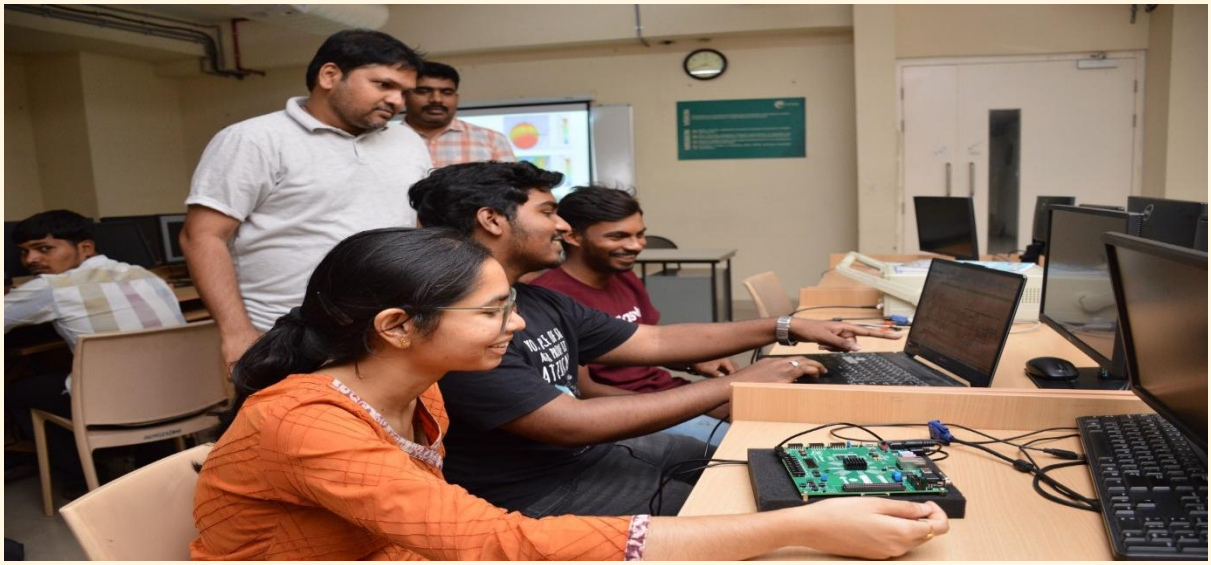
The Phase II AI-ML Introductory Workshop was highly beneficial in strengthening the AI-ML knowledge base of faculty members from core engineering departments. It provided both theoretical insights and practical skills, laying the groundwork for incorporating AI-driven approaches into teaching, student projects, and future research initiatives.

(vi) Five-day Intensive Course Future Tech FPGA & 5G Antennas

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

DATE: JUNE :23- 27,2025

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.



(vii) T-Works Workshop

Dates: 23 Jun 2025 – 27 Jun 2025
Timing: 10:30 AM – 05:00 PM daily
Venue: T-Works, Raidurg, Hyderabad

DAY1: Monday 23/06/2025

Session 1. Introduction to T-Works

T-Works is India's largest fully integrated prototyping centre, offering over 200 industry-grade tools across a 78,000 sq ft facility.

The centre provides consultation, sourcing, fabrication, and end-to-end engineering support for prototypes and MVPs

Session 2. Facilities Visited

- **Metal Shop**: CNC machining (5-axis, 3-axis), tube/pipe bending, welding, conventional mill/lathe
- **Advanced Rapid Prototyping**: Zund G3 cutter, vacuum-former, benchtop 3D mill, Cricut Maker 3, UV printing
- **3D Printing Lab**: Industry-standard filament and resin printers
- **Electronics + Testing Lab**: PCB fabrication, SMT assembly, testing instruments
- **Wood Shop**: Saws, sanders, joiners
- **Ceramic Studio**
- **Laser & Engraving Shop**

Session 3: Fundamentals of Design thinking &Mindset of Makers.

DAY2: Tuesday 24/06/2025

Session 1: Understanding design Thinking, Examples and Activities.

Session 2: Market and Client Research

Market research helps you understand:

- **Trends** in your industry or sector
- **Customer needs** and expectations
- **Competitors**—what they offer and how they price it
- **Opportunities** or **gaps** in the market
- **Market size** and demand

Client research is about understanding your specific target customers:

- Who are they? (age, income, lifestyle, profession)
- What problems do they have?
- How do they currently solve those problems?
- What motivates them to buy?
- Where do they spend time (online, offline)?

DAY3: Wednesday 25/06/2025

Session1: Introduction to Drones, Applications and opportunities

- Agriculture – Spraying, seeding, crop monitoring
- Construction & Infrastructure – Surveying, inspections, progress tracking
- Environment – Forest monitoring, pollution tracking, wildlife surveys
- Surveying & Mapping – Land mapping, mining, urban planning
- Security & Law Enforcement – Crowd control, surveillance, rescue
- Delivery & Logistics – Medical, food, and parcel delivery
- Healthcare & Emergencies – Medical transport, firefighting, disease control
- Disaster Management – Floods, earthquakes, search & rescue
- Défense & Military – Reconnaissance, strike drones, border patrol
- Industrial Inspection – Power lines, solar panels, pipelines
- Media & Entertainment – Filmmaking, event coverage

- Education & Research – Training, data collection, STEM education

Session 2: Drone rules in India

- **Registration**: All drones (except personal nano drones) must be registered on the **Digital Sky** portal.
- **License**: You need a **Remote Pilot License** (RPL) for drones above 250g (Micro and above).
- **Flight Zones**:
    1. **Green** – Allowed up to 400 ft
    2. **Yellow** – Permission required
    3. **Red** – Strictly **no-fly**
- **Fly during daytime only**, within **visual line of sight**.
- **Don't fly near airports, military areas, or crowds**.
- **Insurance** recommended for commercial use.
- **No drone imports allowed**, only components.
- **Use safety tech** like geo-fencing, NPNT, RTH if applicable.

DAY 4: Thursday 26/06/2025

Session1: Introduction to Microcontrollers and types of Microcontrollers.

- Presentation on Different Microcontrollers and their applications

Session2: Introduction to Arduino Uno – ATmega328P and Practical's on Basic applications

Key Features

- **Microcontroller**: ATmega328P
- **Digital I/O Pins**: 14 (6 can be PWM outputs)
- **Analog Inputs**: 6
- **USB Port**: For programming and power
- **Operating Voltage**: 5V

- **Clock Speed**: 16 MHz
- **Programming Language**: C/C++ (via Arduino IDE)
- **Power Supply**: Via USB or 9V battery

DAY 5: Friday 27/06/2025

Session 1&2: Different stages in Product Requirements Document.

Here's a short version of the Product Requirements Document (PRD) stages:

1. **Purpose & Scope** – Define the problem, objectives, and target users.
2. **Research** – Gather user needs, competitor insights, and stakeholder input.
3. **Requirements** – List functional and non-functional requirements with user stories.
4. **User Flows/Wireframes** – Visualize how users will interact with the product.
5. **Constraints** – Note technical limitations and assumptions.
6. **Prioritization** – Identify must-have vs. nice-to-have features.
7. **Timeline** – Set key milestones and delivery expectations.
8. **Review & Approval** – Get sign-off from stakeholders.
9. **Updates** – Revise the PRD as the project evolves.

Opportunities at T-Works

For Students:

- Hands-on prototyping using advanced tools (3D printing, CNC, electronics, etc.)
- Internships and maker bootcamps
- Workshops on design thinking and fabrication
- Support for student startups and project prototyping
- Hackathons and innovation challenges

For Faculty:

- Use of T-Works for research prototyping and consultancy projects
- Collaboration with industry/startups

- Faculty development workshops
- Student project mentoring and curriculum integration
- Opportunities to host sessions or co-create programs

Guest Lectures

(i) IEEE Guest Lecture: Advanced Semiconductor packaging Techniques

Event Date: 10 March 2025
Time: 2 PM
Guest Lecture Summary

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

(ii)Guest lecture: 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

Introduction

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.

About the Speaker

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.

Key Highlights of the Talk

1. Fundamentals of Audio Signal Processing

- 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 analyzing and manipulating sound.

2. Perceptual Audio Coding and MP3

- 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.

3. Applications to Acoustics

- 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.

4. Advances Beyond MP3

- 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.

5. Challenges and Future Directions

- 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.

Outcomes of the Talk

- 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.

iv) IEEE 5G/6G Innovation test bed workshop on transformative teaching , learning and research with IEEE 5G/6G innovation testbed

Date:05/05/2025.

Summary of the Event: Transformative Teaching, Learning, and Research with IEEE 5G/6G Innovation Testbed
Venue: T and P conference hall, Gitam Hyderabad campus.

The seminar 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.

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.

(iii)Guest Lecture: Quality Technical Papers for IEEE

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

Speaker: P Dhanukumar

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

Introduction: 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 Dhanukumar, 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.

Key Points Covered

1. **Understanding IEEE Publications**

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).

2. **Elements of a Quality Paper**

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.

3. **Technical Writing Best Practices**

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.

4. Peer Review and Ethics

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.

5. Tools and Resources

Introduced IEEE Author Digital Tools including IEEE PDF eXpress, IEEE Template (LaTeX & MS Word), Reference Manager tools, and IEEE Author Center.

Encouraged attendees to register on IEEE Xplore to read exemplary papers.

6. Strategies for Impactful Research

Suggested ways to identify novel research gaps by analyzing 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.

Webinars

(i)Webinar on "Designing the Future: From Silicon to Systems"

Date:29/05/2025

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.

Ultimately, "Designing the Future: From Silicon to Systems" is more than a technological concept—it's a call to action for the next generation of engineers to lead innovations that will define the future. Join us as we uncover how foundational electronics evolve into transformative technologies that impact every aspect of human life.

(ii)Webinar on "Facilities at EECE Department, GITAM Hyderabad"

Date: 22/04/2025

Speakers: Dr T Madhavi and Dr Masood Ahmad Mahammad

The Department of Electrical, Electronics and Communication Engineering (EECE), GITAM Hyderabad, recently organized a comprehensive webinar on "Facilities Available at EECE Department." This initiative was aimed at showcasing to students, parents, and academic stakeholders the wide range of facilities, laboratories, and academic support systems that enable the department to deliver high-quality education, hands-on training, and cutting-edge research.

The session began with an overview of the department's vision to cultivate technically proficient and industry-ready graduates, underpinned by a robust infrastructure and experienced faculty. Participants were introduced to the extensive suite of modern laboratories, which form the backbone of practical learning at EECE. These include specialized labs for Digital Electronics, Analog Circuits, Microprocessors & Microcontrollers, VLSI Design, Embedded Systems, Digital Signal Processing (DSP), and IoT applications. Each lab is equipped with industry-standard hardware and licensed software tools like Cadence, Xilinx Vivado, MATLAB, OrCAD PSPICE, and FPGA development boards, providing students with exposure to the same environments they will encounter in professional settings.

The webinar also highlighted the department's growing emphasis on research and innovation. Dedicated research labs encourage students and faculty to undertake sponsored projects, contribute to reputed journals, and develop prototypes in areas such as low-power VLSI, FPGA-based accelerators, smart embedded systems, and AI-driven electronics. Participants learned about ongoing collaborations with leading industries and academic institutions that bring real-world problems into the classroom.

In addition to lab infrastructure, the session featured a tour of smart classrooms equipped with interactive panels and high-speed internet to support hybrid learning. Faculty demonstrated

how these facilities are used to blend traditional teaching with digital content from IEEE, NPTEL, Springer, and other global e-learning platforms, enriching the academic experience.

The webinar also emphasized the vibrant student ecosystem at EECE, supported by professional bodies such as IEEE, and IETE student chapters. These platforms regularly host technical workshops, coding hackathons, paper presentation contests, and hands-on hardware sessions. Success stories were shared of students who leveraged these opportunities to excel in national competitions and secure prestigious internships.

An important highlight was the department's strong industry connect. Through frequent guest lectures by industry experts, workshops on emerging technologies, and value-added certification courses in VLSI, Embedded Systems, and Signal Processing, students are consistently prepared for the demands of the professional world. The department's placement training modules further equip students with essential skills, ensuring they are confident and career-ready.

The webinar concluded with an interactive Q&A session where participants enthusiastically discussed how they could best utilize these facilities for projects, research publications, and entrepreneurial ventures. The event reinforced GITAM Hyderabad EECE department's commitment to providing a dynamic learning environment that seamlessly integrates theory, practical skills, and industry exposure.

Such initiatives not only showcase the department's capabilities but also inspire current and prospective students to fully engage with the rich resources available, driving them toward academic excellence and impactful careers**.**

Achievements

Faculty achievements:

1) Consultancy projects

(i)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

Summary:

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

(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

Summary:

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.

NPTEL Courses

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.

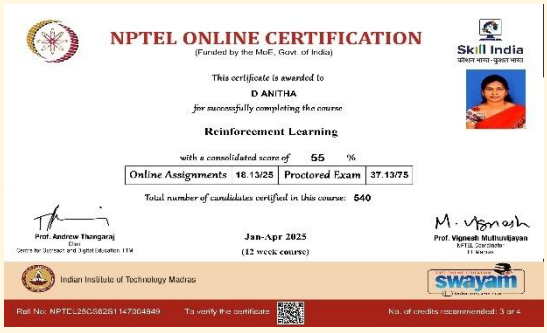
Arunjyothi Eddla successfully completed the 12-week NPTEL certification course on “Data Analytics with Python” during the Jan–Apr 2025 session. This accomplishment reflects her strong analytical skills and proficiency in Python, demonstrating a commitment to continuous learning and advancement in the field of data science and analytics.

Arunjyothi Eddla successfully completed the 12-week NPTEL certification course on “Introduction to Internet of Things” during the Jan–Apr 2025 session. This achievement showcases her foundational understanding of IoT concepts, architectures, and applications, reflecting her dedication to continuous learning and advancement in emerging technologies.

Dr Anitha successfully completed the 12-week NPTEL certification course on “Introduction to Machine learning” during the Jan–Apr 2025 session. This accomplishment reflects her strong analytical skills and proficiency in Python, demonstrating a commitment to continuous learning and advancement in the field of data science and analytics.

Dr Anitha successfully completed the 4-week NPTEL certification course on “python for data science” during the Jan–Apr 2025 session. This accomplishment reflects her strong analytical skills and proficiency in Python, demonstrating a commitment to continuous learning and advancement in the field of data science and analytics.

Dr Anitha successfully completed the 12-week NPTEL certification course on “Reinforcement Learning ” during the Jan–Apr 2025 session. This accomplishment reflects her strong analytical skills and proficiency in Python, demonstrating a commitment to continuous learning and advancement in the field of data science and analytics.



V. Shiva Prasad was awarded a Certificate of Appreciation by NPTEL for his active participation during the Jan–Apr 2025 session. He was also recognized as an "NPTEL Enthusiast," highlighting his dedication to continuous learning and consistent engagement with NPTEL's online certification programs.

V. Shiva Prasad successfully completed the 12-week NPTEL certification course on "Switching Circuits and Logic Design" during the Jan–Apr 2025 session. This achievement reflects his strong understanding of digital logic concepts and his commitment to continuous professional development through rigorous online learning.

V. Shiva Prasad successfully completed the 12-week NPTEL certification course on "Object-Oriented System Development Using UML" during the Jan–Apr 2025 session. This accomplishment demonstrates his proficiency in object-oriented design principles and the application of UML for system modeling, reflecting his commitment to professional growth in software development.

V. Shiva Prasad was awarded a Certificate of Appreciation by NPTEL for his active participation during the Jan–Apr 2025 session. He was also recognized as an "NPTEL discipline star," highlighting his dedication to continuous learning and consistent engagement with NPTEL's online certification programs.

3.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

Distinguished Delegates Visit m 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)

Highlights of the Visit

Expert Talks:

Prof. Kiran Kumar Kuchi delivered an insightful session on next-generation wireless communication technologies, emphasizing research opportunities in 5G and beyond.

Dr. V. Raghunandhan shared his experiences on telecom policy and regulatory frameworks, providing students with a unique industry perspective. Interactive Engagements:

The delegates interacted with faculty and students, encouraging them to explore interdisciplinary research and higher studies.

A lively Q&A session allowed students to discuss emerging trends in IoT, spectrum management, and telecom regulations.

Lab Walkthrough: The visitors toured the EECE laboratories and appreciated the state-of-the-art facilities, offering valuable suggestions to enhance hands-on learning.

Outcomes

The visit laid the foundation for potential collaborations with IIT Hyderabad and industry experts in the telecom sector. Plans for guest lectures, workshops, and joint research initiatives were discussed to further enrich the academic ecosystem.

Industrial Visits

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 : Dr. T. Madhavi **(**Professor)

INTRODUCTION:

The Advanced Systems Laboratory (ASL) is a premier research and development establishment under the Defence Research and Development Organisation (DRDO), Ministry of Defence, Government of India. Located in Hyderabad, ASL plays a crucial role in the design, development, and production of state-of-the-art strategic missile systems.

Established with a vision to enhance India's self-reliance in defense technology, ASL specializes in the development of strategic missile systems, including ballistic missiles, re-entry vehicles, and advanced navigation systems. It is the backbone behind the successful execution of several flagship missile programs such as Agni, Prithvi, and K-series missiles.

ASL is equipped with world-class infrastructure, advanced computational facilities, and a team of highly skilled scientists and engineers. The laboratory works in close coordination with other DRDO labs, Indian industries, and academic institutions to foster innovation and indigenous technological advancement in missile systems.

With a legacy of excellence and a forward-looking approach, ASL continues to contribute significantly to strengthening India’s defense capabilities and strategic deterrence.

OBJECTIVES OF THE VISIT:

To Gain Insight into Indigenous Missile Development
Understand the role of ASL in the design, development, and testing of strategic missile systems and its contribution to national defence.

To Observe Advanced R&D Infrastructure
Explore the cutting-edge research facilities, laboratories, and testing environments that support missile system development.

To Learn About Key Missile Programs
Acquire knowledge about major missile projects such as the Agni series, Prithvi, and other strategic defense initiatives spearheaded by ASL.

To Interact with Experts and Scientists
Engage with DRDO scientists and engineers to understand real-world applications of defense technologies and ongoing research efforts.

To Understand the Role of DRDO in National Security
Gain a broader perspective on how DRDO, through ASL and other labs, contributes to India's self-reliance and technological advancements in defense.

To Inspire Innovation and Research in Defense Technology
Motivate students/professionals to pursue careers in defense research and development by experiencing India's indigenous capabilities firsthand.

KEY LEARNINGS:

1. **Understanding of Strategic Missile Systems**
   Gained in-depth knowledge about the design, development, and operational principles behind India's indigenous missile systems like the **Agni** and **K-series** missiles.
2. **Insight into Advanced Technologies**
   Observed the use of cutting-edge technologies in **aerodynamics**, **propulsion systems**, **guidance and control**, and **re-entry vehicle design**.
3. **Exposure to Research & Development Processes**
   Learned how ASL conducts R&D through simulation, modeling, prototyping, and rigorous testing to ensure performance and reliability.
4. **Appreciation for Indigenous Defense Capabilities**
   Developed a deeper respect for India's self-reliance in strategic defense technologies and the efforts made under the **Make in India** initiative.
5. **Interdisciplinary Collaboration in Defense Projects**
   Understood how various branches of science and engineering—including mechanical, electrical, electronics, computer science, and aerospace—integrate to develop complex defense systems.
6. **Project Management & Systems Engineering**
   Observed the structured approach to large-scale defense projects, from concept to deployment, emphasizing precision, security, and timelines.
7. **Inspiration for Innovation and National Service**
   The visit highlighted the importance of innovation, dedication, and scientific rigor in contributing to national security and inspired a sense of purpose in aspiring engineers and scientists.

AGENDA OF THE VISIT:

The visit to the Advanced Systems Laboratory (ASL), a premier establishment under the Defence Research and Development Organisation (DRDO), Hyderabad, was organized to

provide participants with an in-depth understanding of India's strategic defense technologies, especially in the field of missile systems development.

The agenda was structured to ensure maximum exposure to the laboratory's key functions and technological achievements, as well as to facilitate interaction with scientists and experts involved in cutting-edge defense research.

The main components of the visit agenda were as follows:

- **Welcome and Introduction Session:**
  Participants were formally welcomed by ASL officials, followed by an introductory briefing on DRDO's mission and ASL's specialized role in the design and development of strategic missile systems.
- **Technical Presentation:**
  A detailed presentation was conducted to explain ASL's key projects, including the Agni missile series**,** re-entry vehicle technologies**,** solid propulsion systems**,** and advancements in guidance and control mechanisms.
- **Laboratory and Facility Visit:**
  A guided tour (subject to clearance) of selected R&D facilities and laboratories was arranged to provide participants with a close look at the research environment, ongoing projects, and testing infrastructure.
- **Interactive Session with Scientists:**
  Participants had the opportunity to engage in a Q&A session with senior scientists, gaining valuable insights into defense R&D challenges, innovation processes, and career prospects within DRDO.
- **Group Photo and Feedback Collection:**
  The visit concluded with a group photograph and the collection of feedback from participants to assess their learning experience and document the visit officially.

This agenda ensured that the participants not only observed the high-level defense technologies developed at ASL but also appreciated the commitment and scientific excellence that contribute to India's strategic strength.

DETAILS OF THE VISIT:

Advanced Systems Laboratory (ASL), DRDO – Hyderabad

The visit to the ASL, a premier establishment under the DRDO, was organized to provide participants with first-hand exposure to India's indigenous defense research and development efforts, particularly in the field of strategic missile systems.

During the visit, participants were given a comprehensive overview of the laboratory's mission, capabilities, and contributions to national defense. The program included:

- A **welcome session** and **introductory briefing** about DRDO and ASL's role in strategic missile development.
- **Technical presentations** highlighting ASL's major projects, including the **Agni missile series**, **re-entry technologies**, and **missile propulsion systems**.
- A **guided tour** (subject to security clearance) of selected laboratories and facilities showcasing advanced research in missile technologies.
- An **interactive session** with DRDO scientists, where participants engaged in Q&A and gained insights into career opportunities and the research environment in India's defense sector.
- The visit concluded with a **group photo session** and feedback collection.

The visit was highly informative and served its purpose of educating and inspiring participants about India's defense capabilities and the importance of indigenous technological advancement. It also strengthened the connection between academic institutions and national research establishments.

CONCLUSION:

The visit to the Advanced Systems Laboratory (ASL), DRDO – Hyderabad was an enlightening and inspiring experience. It provided valuable insights into India's advancements in defense technology, particularly in the area of strategic missile systems. Participants gained a deeper understanding of the research, development, and innovation processes that go into building indigenous defense capabilities.

The interaction with scientists and exposure to cutting-edge technologies reinforced the importance of self-reliance and scientific excellence in national security. It also highlighted the critical role that organizations like DRDO and laboratories such as ASL play in safeguarding the nation through technological strength.

Overall, the visit not only enhanced technical knowledge but also instilled a sense of pride and motivation among the participants to contribute to India's defense and scientific endeavors.

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)

INTRODUCTION:

The Engineering Staff College of India (ESCI), located in Hyderabad, is an autonomous institution established in 1981 by the Institution of Engineers (India). It serves as a premier training and research center dedicated to enhancing the technical and managerial skills of engineers, technologists, and professionals across various sectors.

ESCI offers specialized training programs, workshops, and seminars in engineering, technology, management, and sustainable development. It plays a vital role in professional development and capacity building, catering to government organizations, public sector undertakings, private industries, and international participants.

With modern infrastructure, expert faculty, and a focus on industry-oriented knowledge, ESCI contributes significantly to national development by promoting innovation, leadership, and excellence in engineering practice.

OBJECTIVES OF THE VISIT:

 Understand ESCI's Training Mission & Educational Programs
Gain insights into its role as a premier national institute offering continuing professional development in engineering, technology, and management across core and emerging domains .

 Explore Cutting-Edge Curriculum & Emerging Technology Modules
Learn how ESCI integrates topics like AI/ML, IoT, Smart Cities, Additive Manufacturing, Green Energy, Cybersecurity, and Blockchain into its annual training

 Observe the Faculty & Industry-Institute Interface
Understand ESCI's use of experienced internal faculty and external experts to bridge the gap between academic theory and industry practice

 Review Applied R&D & Consultancy Initiatives
Examine ESCI's R&D center recognized as a DST-listed SIRO, its grant-in-aid student-research programs, and consultancy in quality systems, infrastructure projects, and third-party audits .

 Assess Infrastructure, Laboratories & Campus Facilities
Tour ESCI's ISO/NABL-accredited labs, convention centre, residential facilities, and quality-productivity systems division to evaluate institutional capabilities .

 Identify Opportunities for Collaboration and Capacity Building
Explore partnerships in training, research grants, consultancy, or student-faculty exchange programs, especially in areas like rural water supply, renewable energy, and smart infrastructure .

 Inspire Participants through Professional Development Exposure
Motivate engineers, managers, or students by showcasing ESCI's holistic training system, strong placement record, discipline-wise workshops, and pedagogy.

KEY LEARNINGS:

1. **Comprehensive Understanding of Professional Development Programs**
   Gained insights into the wide array of technical and managerial training programs offered by ESCI, designed to enhance the skills of engineers, managers, and professionals across sectors.
2. **Exposure to Emerging Technologies and Industry Trends**
   Learned about cutting-edge topics such as Artificial Intelligence, Internet of Things (IoT), Smart Infrastructure, Renewable Energy, Cybersecurity, and Industry 4.0 — all integrated into ESCI's training modules.
3. **Insight into Applied Research and Consultancy Projects**
   Understood how ESCI engages in research, development, and consultancy services for government and private sector clients, especially in the areas of water resource management, civil engineering, energy, and IT.
4. **Observation of Modern Infrastructure and Labs**
   Visited ESCI's state-of-the-art laboratories, training halls, conference facilities, and simulation centers, which support effective hands-on learning and real-world applications.
5. **Interaction with Expert Faculty and Industry Professionals**
   Benefited from sessions led by highly experienced internal faculty and industry experts, gaining practical knowledge and real-world perspectives on engineering challenges and solutions.
6. **Awareness of National and International Collaborations**
   Learned about ESCI's collaborations with government agencies, PSUs, private companies, and international organizations to promote sustainable development and professional excellence.
7. **Appreciation of ESCI's Role in Capacity Building**
   Realized ESCI's significant contribution to skill development and knowledge dissemination in line with national missions such as Make in India, Digital India, and Smart Cities.
8. **Motivation for Lifelong Learning and Innovation**
   The visit reinforced the importance of continuous professional learning and inspired participants to pursue excellence, innovation, and leadership in their respective fields.

AGENDA OF THE VISIT:

The visit to the Engineering Staff College of India (ESCI), Hyderabad, was organized with the objective of providing participants with exposure to the institution's advanced training modules, research facilities, and its contribution to technical and managerial skill development across various engineering disciplines.

The agenda was carefully designed to offer both theoretical insights and practical understanding through interactive sessions, expert talks, and a guided tour of the campus and facilities.

The schedule of the visit included the following key components:

- **Welcome and Introduction:** A formal welcome address by ESCI officials, followed by an overview of the institution's mission, vision, and role in national capacity building.
- **Technical Presentations:** Sessions focused on ESCI's training and research programs, with emphasis on emerging technologies such as AI, IoT, smart infrastructure, and renewable energy.
- **Campus Tour:** A guided tour of ESCI's modern laboratories, classrooms, and training infrastructure to showcase its academic and technical capabilities.
- **Expert Interaction:** An open discussion and Q&A session with experienced faculty and industry professionals to exchange ideas and clarify queries related to ongoing projects and training opportunities.
- **Feedback and Group Photo Session:** Participants were invited to share feedback and impressions of the visit, followed by a group photo for documentation and memory.

The visit concluded with a vote of thanks, expressing gratitude to ESCI for their hospitality and the opportunity to learn from their esteemed institution.

DETAILS OF THE VISIT:

The visit to the Engineering Staff College of India (ESCI), Hyderabad, was conducted with the objective of providing participants with exposure to advanced technical training, professional development practices, and real-world applications of engineering and management principles. ESCI, an autonomous organ of the Institution of Engineers (India), is renowned for its role in imparting continuing education and consultancy in diverse engineering disciplines.

The visit took place on April 10, 2025 at the ESCI campus located on Old Bombay Road, Gachibowli, Hyderabad – 500032, Telangana.

Purpose of the Visit:
The primary goal of the visit was to familiarize participants with:

- The ongoing training and consultancy programs offered by ESCI
- Real-time engineering applications and solutions
- Infrastructure supporting technical education and research
- Interaction with domain experts and exposure to current industry practices

Key Activities During the Visit:

- Introductory session on ESCI's mission, training model, and impact
- Technical presentations on emerging fields such as Smart Infrastructure, AI/IoT, Energy Systems, and Civil Project Management
- Guided tour of the ESCI campus, including laboratories, classrooms, and the convention center
- Interaction with experienced faculty and subject matter experts
- Feedback and concluding session with group photograph

The visit was highly informative and contributed significantly to the academic and professional development of the participants. It also highlighted ESCI's role in bridging the gap between academic knowledge and industrial practices.

CONCLUSION:

The visit to the Engineering Staff College of India (ESCI), Hyderabad was a highly enriching and insightful experience. It provided the participants with a deeper understanding of the importance of continuous professional development in the field of engineering and management. The exposure to ESCI's state-of-the-art infrastructure, expert-led training programs, and focus on emerging technologies highlighted the institution's pivotal role in bridging the gap between academic knowledge and industry needs.

Through technical sessions, facility tours, and interactive discussions with professionals, participants gained valuable knowledge on the practical applications of engineering concepts in real-world scenarios. The visit also inspired a spirit of innovation, lifelong learning, and professional excellence among the attendees.

Overall, the visit significantly contributed to the academic and career outlook of the participants and underscored ESCI's commitment to nation-building through engineering education and research.

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.

Key Areas of Collaboration:

1. Training & Workshops:

Hands-on sessions on ARM Cortex, Linux-based embedded systems, IoT platforms, etc.

Participation in seminars and technical events.

2. Student Engagement:

Internship opportunities at Phytec.

Project guidance for final-year and capstone projects.

Campus recruitment drives.

3. Faculty Empowerment:

Faculty development programs (FDPs).

Research collaboration opportunities.

4. Infrastructure Development:

Support for setting up embedded and IoT labs with Phytec tools and boards.

Licensing of Phytec software and training materials.

Expected Outcomes:

Enhanced student employability through exposure to real-world embedded systems.

Collaborative research and prototype development.

Industry-aligned teaching-learning practices.

Creation of a sustainable ecosystem for innovation and product development

Placements

AXIS ENERGY

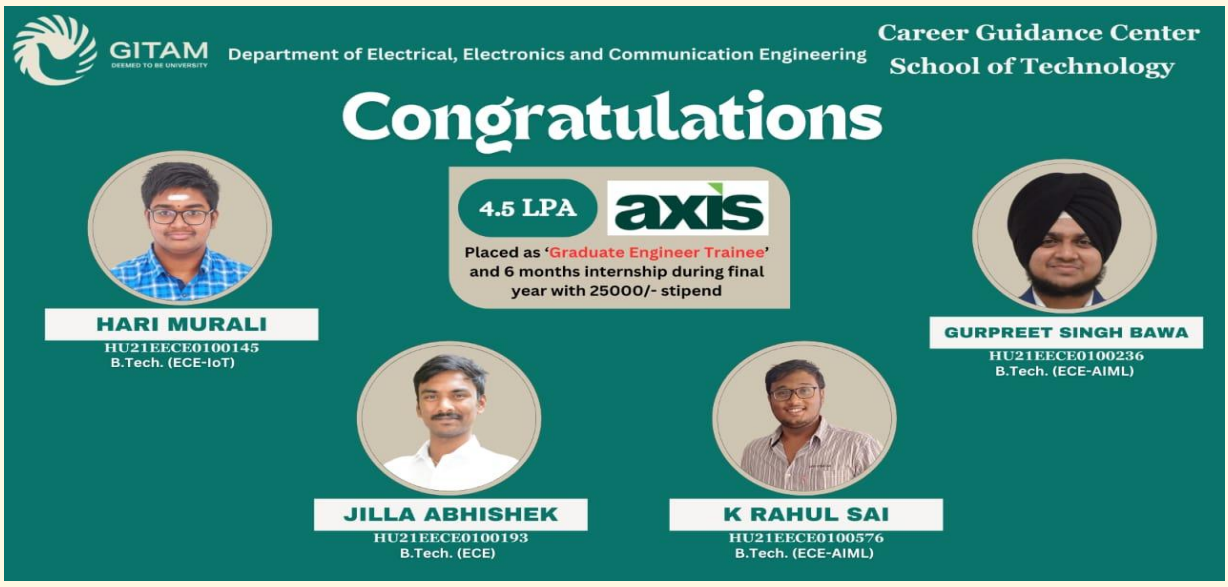
We are pleased to congratulate the following students on their successful placement at Axis Energy Ventures Each of these candidates has secured an offer with an annual compensation Package of Rs. 4.5 LPA (Lakh per Annum)

GURPREET SINGH BAWA (HU21EECE0100236)

JILLA ABHISHEK (HU21EECE0100193)

V. HARI MURALI KRISHNA (HU21EECE0100145)

K. RAHUL SAI (HU21EECE0100576)



Mu Sigma (Do the MATH)

We are pleased to congratulate the following students on their successful placement at Axis Energy Ventures Each of these candidates has secured an offer with an annual compensation Package of Rs. 30 LPA

THOTA GOUTHAM (HU21EECE0100594)

Accenture

We are pleased to congratulate the following students on their successful placement at Accenture Ventures Each of these candidates has secured an offer with an annual compensation Package of Rs. 4.5 LPA

MAMRITHA M	(HU21EECE0100508)
CHEERLA OMESH SAGAR	(HU21EECE0100239)
GONE DEEKSHITHA	(HU21EECE0100203)
SINANAHEMAD BANDI	(HU21EECE0100183)
GAYATRI RACHANA TRIPURANA	(HU21EECE0100223)
B MOHAN SIDDESWARA VENKAT	(HU21EECE0100111)
S.KRITTIKA SRI SARADHA	(HU21EECE0100132)
SALMA NOWSHEEN	(HU21EECE0100122)

TCS (Tata Consultancy Services)

We are pleased to congratulate the following students on their successful placement at Tata Consultancy Services Ventures Each of these candidates has secured an offer with an annual compensation Package of Rs. 3.96 LPA

T HARIKA (HU21EECE0100135)

Tech Mahindra

We are pleased to congratulate the following students on their successful placement at Tech Mahindra Ventures Each of these candidates has secured an offer with an annual compensation Package of Rs. 4/5.5 LPA

S.KRITTIKA SRI SARADHA (HU21EECE0100132)

HARIKA THIPPARAM (HU21EECE0100135)

ARANGI VENKATA AYYAPPA CHALAM (HU21EECE0100187)

CHITTETI AMOOLYA (HU21EECE0100233)

SALMA NOWSHEEN (HU21EECE0100122)

VARUN KASTURI (HU21EECE0100577)

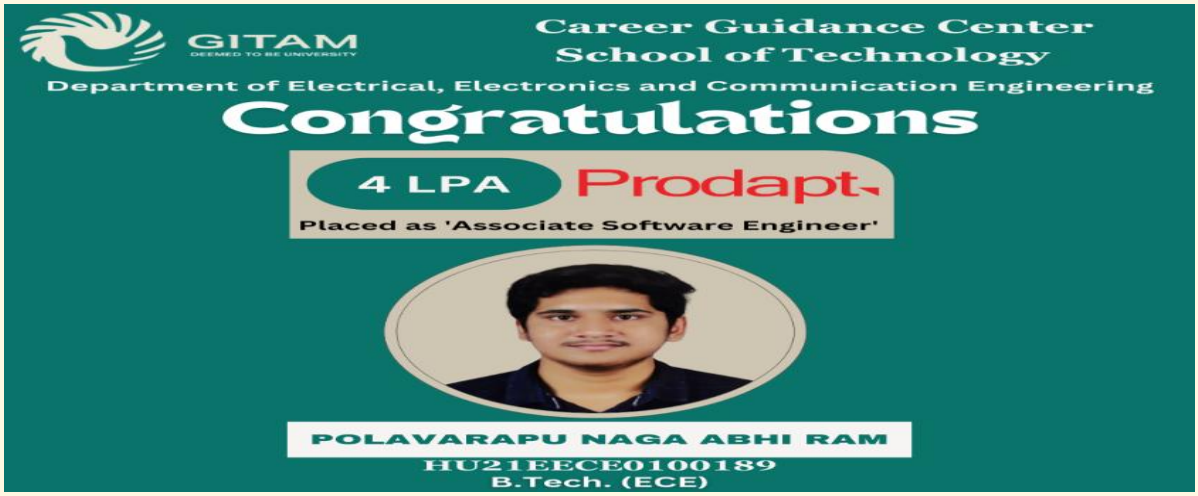
SINANAHEMAD BANDI (HU21EECE0100183)

GAYATRI RACHANA TRIPURANA (HU21EECE0100223)

Prodapt

We are pleased to congratulate the following students on their successful placement at Prodapt Ventures Each of these candidates has secured an offer with an annual compensation Package of Rs. 4 LPA

P.N.ABHI RAM (HU21EECE0100189)



KPIT

We are pleased to congratulate the following students on their successful placement at KPIT Ventures Each of these candidates has secured an offer with an annual compensation Package of Rs 4.5 LPA.

PALAKURTHI VAMSHI (HU21EECE0100134)

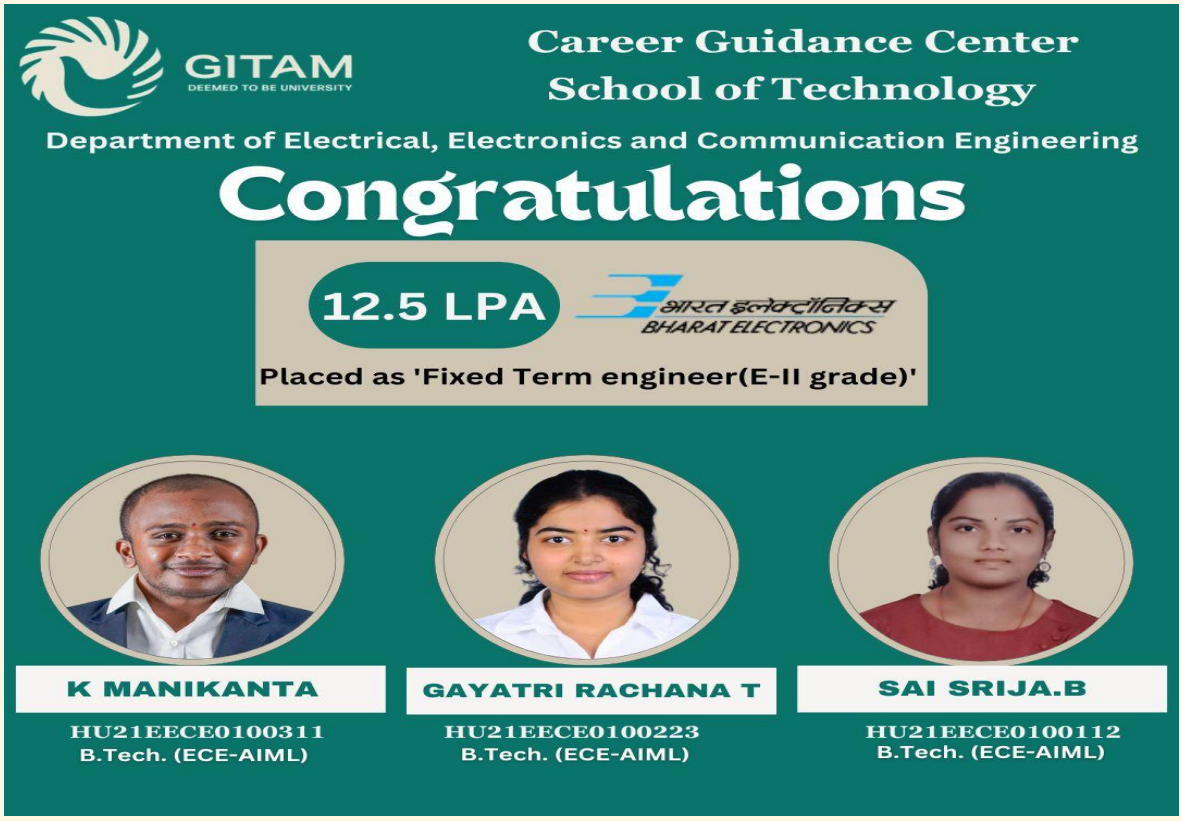
BEL

We are pleased to congratulate the following students on their successful placement at BEL Ventures Each of these candidates has secured an offer with an annual compensation Package of Rs. 12.5 LPA

K.MANIKANTA (HU21EECE0100311)

Gayatri Rachana Tripurana (HU21EECE0100223)

SAI SRIJA.B (HU21EECE0100112)

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