GAYATRI VIDYA PARISHAD COLLEGE FOR DEGREE AND P.G. COURSES (A)
ENGINEERING AND TECHNOLOGY PROGRAM
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
RUSHIKONDA, VISAKHAPATNAM - 530045

**A Report**
**on**
**A Five Day Faculty Development Programming**

# "RECENT ADVANCEMENTS IN COMMUNICATIONS, DATA ANALYTICS & HYPERMESH USING AI TOOLS"

**From**

**22-04-2024**
**to**
**26-04-2024**

ABOUT THE DEPARTMENT

The Department is committed to establish, maintain and advance abroad understanding of Electronics & Communication Engineering to fulfill academic and professional objectives.

## VISION

To evolve into a center of excellence in Engineering Technology through creative and innovative practices in teaching-learning, promoting academic achievement & Research excellence to produce internationally accepted competitive and world class professionals.

## MISSION

To provide high quality academic programs, training activities, research facilities and opportunities supported by continuous industry institute interaction aimed at employability, entrepreneurship, leadership and Research aptitude among students

Department of Electronics and Communication Engineering, Gayatri Vidya Parishad College for Degree and PG Courses (A), Rushikonda, Visakhapatnam in association with Department of Mechanical Engineering has organized a five day Faculty Development Program (FDP) on "**Recent**

**Advancements in Communications, Data Analytics & Hyper mesh using AI Tools**" from **22.04.2024 to 26.04.2024.**

Principal GVPCDPGC(A) Prof S. Rajani have inaugurated the FDP and has inspired the faculty of various institutions to get the maximum benefit out of the Program in learning and acquiring the inherent knowledge to be delivered by the distinguished speakers from Industry. Prof P.V. Vinay Director Engineering and Technology Program, Gayatri Vidya Parishad College for Degree and PG Courses (A) have addressed the participants about the importance of attending such faculty development programs. Dr. P.A. Nageswara Rao, HOD - ECE and **Dr.S. Krishnaveni** have enlightened with the recent and latest developments in the Antenna Design to suite specific applications globally. Coordinators Dr. V. Adi Narayana, Mrs. K. Deepthi have welcomed the participants for the Program and has assured the participants that the resource persons with excellent profile of research would be delivering their best during the sessions of the Program.

An overwhelming response from the faculty of various institutes has marked the significance of the Program. The faculty participants have participated actively and have utilized the opportunity in showing their interest to learn and acquire the latest trends and developments in the field of Antenna Design and their Applications. The participants from various distinguished organizations have attended the Program. A total of 35 participants from various organizations/institutes took part and made the FDP a grand success.

Dr. V. Adi Narayana has conveyed the vote of thanks to the Management of Gayatri Vidya Parishad College for Degree and PG Courses (A), the resource person **Dr. S. Krishnaveni** and all the participants and the Department of ECE

for extending their support to organize The 5-day Faculty Development Program.

The 5-day Faculty Development Program on Recent Advancements in Communications, Data Analytics & Hypermesh using AI Tools was held from 22-04-2024 to 26-04-2024 at the Artificial Intelligence & Machine Learning Lab, Department of ECE, E & T Program, GVPCDPGC(A). 50 faculty members from different Institutions have participated in the 5-day FDP.

The objective of the FDP was to provide participants with comprehensive knowledge and practical skills required to develop real time modules for industry application using Altair Feko tools. The FDP spanned over 5 days and covered various aspects of Communications, Data Analytics & Hypermesh using AI Tools theory, concepts and hands-on experience.

Inaugural Function

**GAYATRI VIDYA PARISHAD COLLEGE FOR DEGREE AND P.G. COURSES (A)**
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Lightening the Lamp during inaugural function


Speech by Principal Prof.S.Rajani,Principal,GVPCDPGC(A) in the Inaugural Session

Speech by Prof. Rajaganapathi garu, joint secretary,GVP in the Inaugural Session

Speech by E&T Director Prof.P.Vinay,I/C Director-E&T, Dean Academics,GVPCDPGC(A) in the Inaugural Session


Speech by E&T Dean Placement Mr. Giridhar garu in the Inaugural Session

HOD-ECE Dr.P.A Nageswara Rao addressing the gatheringin the Inaugural Session of 5-Day FDP


Welcoming and introductory key note of FDP by Convener Dr.V.Adinarayana in the Inaugural Session.

## Day 1: 22/04/2024 – Monday
## Morning Session (Module-1: Wearable Antenna)

Prof. S. Krishna Veni, Professor , Resource Person, delivering her lecture to the participants

The first day of the 5-day Faculty development Program commenced with an enlightening morning session on the fundamentals of Antennas and types of Antennas. Participants were introduced to the core concepts, beginning with a comprehensive overview of Antennas definition and scope. The session progressed with an exploration of Wearable Antennas, emphasizing their pivotal roles in contemporary technological advancements. Through engaging discussions, attendees delved into various practical Case studies gaining insights into its diverse applications across industries.

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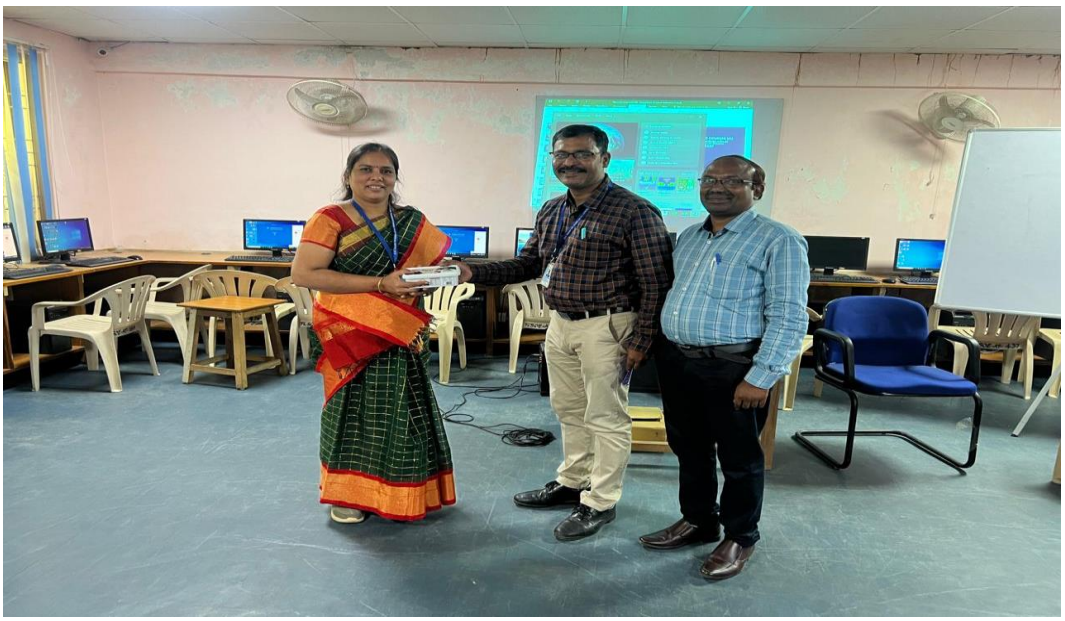

**Memento presentation to Prof S. Krishna Veni by HOD-ECE Dr.P.A.Nageswara Rao**

**Day 1: 22/04/2024 – Monday**

**Afternoon Session (Module-2:**Visual Light Communication system**)**

**Prof. Venkata Mani. V** Resource Person, Professor NIT Warangal delivering her lecture to the participants

Prof. V.V. Mani started the lecture with giving a brief introduction to 5G Communication technology and also, comparing 5G with its predecessors. She explained in what aspects 5G outperforms its predecessors. She even pointed out the challenges and drawbacks faced by 5G in the context of rapidly changing and evolving related contemporary technologies. The role of spectral availability and the need in deploying a new generation communication technology was covered.

The operation of a Visual Light Communication (VLC) system was explained with the help of corresponding block diagram besides distinguishing it from a conventional wireless communication system. The additional circuitry that's required in order to convert a conventional wireless communication system into a VLC was covered in detail. The exhibition of VLC system's operation with a proper tested that was done in NIT Warangal was displayed. The advantages offered by VLC and also its disadvantages were discussed. The session was concluded with the statement that VLC can reinforce current communication technologies but not replace them

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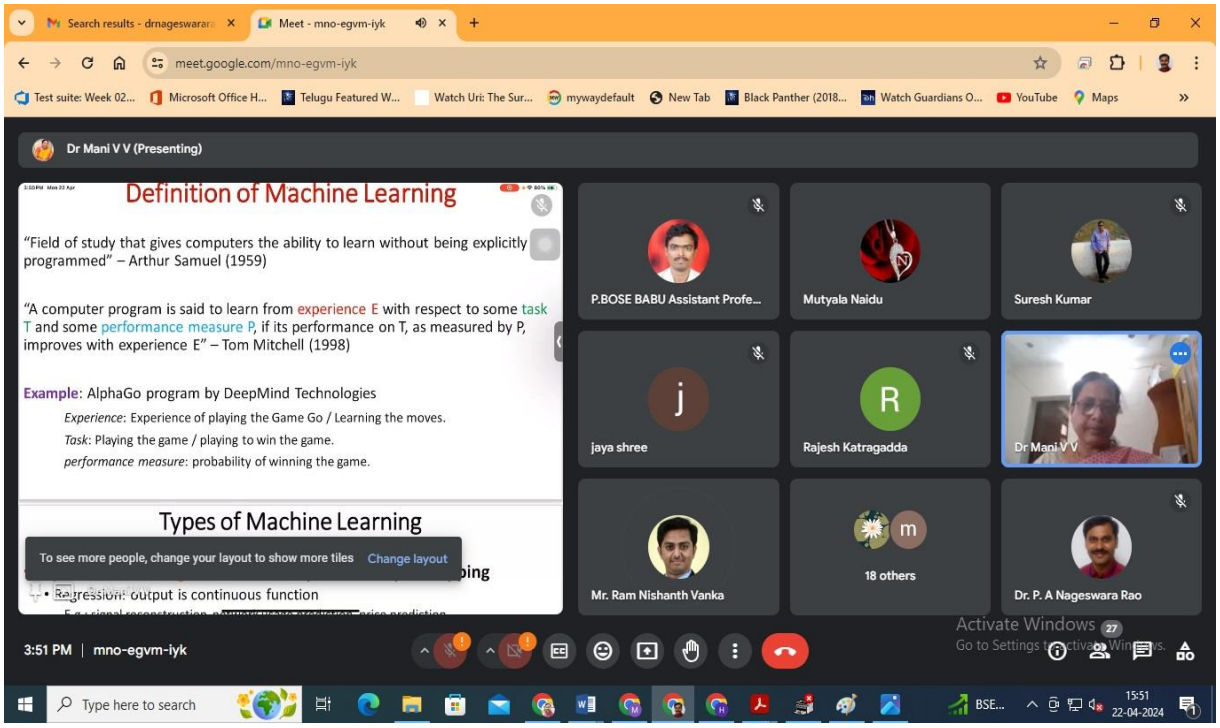
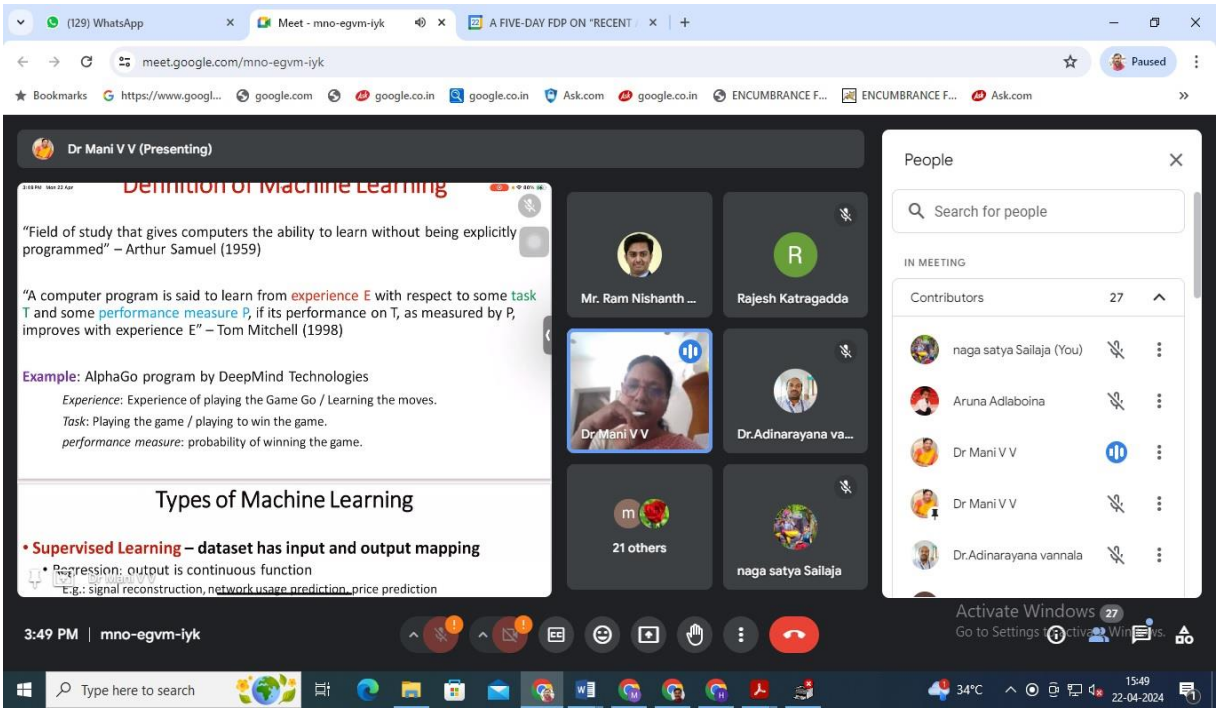



## Afternoon Session (Module 2: Visual light communication for 5G)

Following a stimulating morning, the afternoon session transitioned into Python Programming, a cornerstone skill in the realm of Machine Learning. Participants embarked on an immersive journey into Python's syntax and functionalities, beginning with an introduction to its core concepts. Topics such as Sequences, Iteration, Booleans, and Conditionals were elucidated, laying the groundwork for proficient coding practices. Moreover, attendees delved into the intricacies of Functions, Modules, and Python Data Structures, essential components for data manipulation and analysis. The session culminated with an overview of Object-Oriented Programming (OOPs), providing participants with a holistic understanding of Python's versatile capabilities.

**Day 2: 2/05/2024 – Tuesday**

**Morning Session (Module - 3: Altair Embed)**
**Dr. Bala Dastagiri** Resource Person, Technical Project Manager Altair Feko delivering his lecture to the participants


**Dr. Bala Dastagiri** Resource Person, Technical Project Manager Altair Feko delivering his lecture

Continuing the immersive learning experience, the morning session of

Day 2 focused on exploring essential tools and packages utilized in Machine Learning workflows. Participants delved into prominent Data Analysis Tools including NumPy, Pandas, and SciPy, mastering their functionalities for efficient data manipulation and processing. Additionally, the session delved into Data Visualization techniques, leveraging Matplotlib, Seaborn, Plotly, and Bokeh to create insightful visual representations of datasets. Furthermore, attendees gained familiarity with Machine Learning frameworks such as scikit-learn and TensorFlow, essential for implementing predictive models and algorithms.


## Afternoon Session (Module - 4: Compose)



**Practise session by the Faculty on FEKO software**


## Felicitation

## Day 3: 3/05/2024 - Wednesday

## Prof. Sasibhushan Rao, Principal, AU
## Morning Session (Module–5:Wireless Communications and its applications)

The third day commenced with a comprehensive exploration of Mathematics and Statistics foundational to Machine Learning. Participants engaged in a rigorous study of essential mathematical concepts including Linear Algebra and Calculus, indispensable for understanding ML algorithms. Moreover, the session delivered into Statistics, covering key topics such as Central Tendency, Dispersion, and Percentiles, facilitating a deeper comprehension of data distributions and variability. Enriching examples of co-integrated series, correlation/Co-integration, non-Gaussianity and asymmetry Attendees also explored the significance of Hypothesis testing and statistical interference in the context of ML applications, enriching their analytical capabilities.


Prof. Sasibhushan Rao, Principal, AU,delivered a lecture on

"Wireless Communications and its applications"

**Dr.Anudeep Bellary,Altair**

**Afternoon Session (Module - 6: Altair Feko)**

Building upon the morning's theoretical underpinnings, the afternoon session transitioned into practical data visualization techniques using Altair Feko is a software tool used for electromagnetic simulation and analysis. It's widely used in various industries for applications such as antenna design, electromagnetic compatibility (EMC), and radar cross-section (RCS) analysis. Feko employs different computational methods, including the Method of Moments (MoM), Finite Element Method (FEM), and Geometric Theory of Diffraction (GTD), allowing users to solve complex electromagnetic problems. and Heatmaps, leveraging Matplotlib's versatility. Furthermore, the session explored advanced visualization techniques using Seaborn, culminating in the visualization of real-world datasets such as the Iris Flower dataset, fostering a deeper understanding of data exploration and analysis methodologies.

## Day 4: 4/05/2024 – Thursday

## **Dr.Bala Dastagiri,** Techfluent solutions, Pvt.Ltd

### Morning Session (Module - 7: Data Analytics)

The fourth day commenced with an insightful morning session dedicated to Altair offers a suite of data analytics solutions designed to help organizations derive insights from their data, optimize decision-making, and enhance overall performance. Here are some key components and features of Altair's data analytics offerings:

**Altair Smart Learning**: This platform provides machine learning and artificial intelligence tools to build predictive models and automate decision-making processes.

**Altair Smart Analytics**: A business intelligence tool that enables users to visualize data, generate reports, and explore insights through interactive dashboards.

**Altair Panopticon**: A real-time data visualization tool that allows users to analyze and visualize streaming data, making it especially useful for operational monitoring and decision support.

**Altair Data Preparation**: This tool streamlines the process of cleaning and preparing data for analysis, helping users to efficiently transform raw data into actionable insights.

**Mr. Pratik Deshpande,** Altair
**Afternoon Session (Module - 7: Hypermesh & Optistruct)**

## HyperMesh

**Overview**: HyperMesh is a leading software for finite element modeling and pre-processing. It is known for its robust meshing capabilities and user-friendly interface, allowing engineers to create high-quality mesh for complex geometries.

**Key Features**:

**Advanced Meshing Tools**: Supports various meshing techniques, including automatic and manual meshing, with options for different element types (e.g., tetrahedral, hexahedral).

- **Geometry Cleanup**: Tools for repairing and simplifying CAD models to facilitate meshing.
- **Multi-Disciplinary Capabilities**: Supports models for structural, thermal, fluid, and electromagnetic analysis.
- **Material and Property Definition**: Easy assignment of material properties and boundary conditions.
- **Post-Processing Integration**: Seamless integration with Altair's post-processing tools for visualization and analysis of results.

## OptiStruct

**Overview**: OptiStruct is a structural analysis and optimization solver that focuses on linear and nonlinear static analysis, dynamic analysis, and optimization. It helps engineers improve the performance of their designs while reducing weight and material usage.

**Key Features**:

- **Optimization Algorithms**: Offers various optimization methods, including topology optimization, shape optimization, and sizing optimization.

- **Linear and Nonlinear Analysis**: Capable of performing both linear static and dynamic analysis, as well as nonlinear simulations.
- **Multi-Physics Analysis**: Supports coupling with other physics (thermal, fluid, etc.) for comprehensive simulations.
- **Robust Solver**: Utilizes advanced numerical methods for solving large-scale problems efficiently.
- **Design Space Exploration**: Helps in exploring various design configurations to find the best-performing solution.

**Day 5: 6/05/2024 – Friday**

**Dr.Sanjeev Sharma,IIT bhu Varanasi**

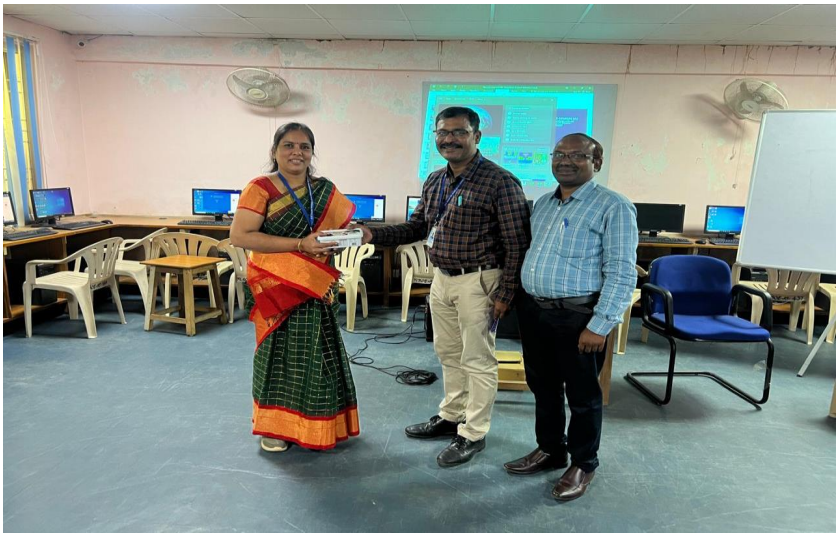
**Morning Session (Module - 8: 5G Technologies and Beyond)**

The fifth day commenced with a deep dive into Supervised Machine 5G technology represents a significant leap in mobile communication, offering enhanced speed, reduced latency, and the ability to connect a massive number of devices simultaneously. Here are some key aspects and future trends regarding 5G and beyond:

## Key Features of 5G

1. **Enhanced Speed**: 5G can deliver download speeds exceeding 10 Gbps, which is significantly faster than 4G.
2. **Low Latency**: With latency as low as 1 millisecond, 5G enables real-time applications like autonomous vehicles and augmented reality.
3. **Massive Connectivity**: It can support up to a million devices per square kilometer, essential for the Internet of Things (IoT).
4. **Improved Capacity**: 5G networks can handle more data and support a higher number of simultaneous users.

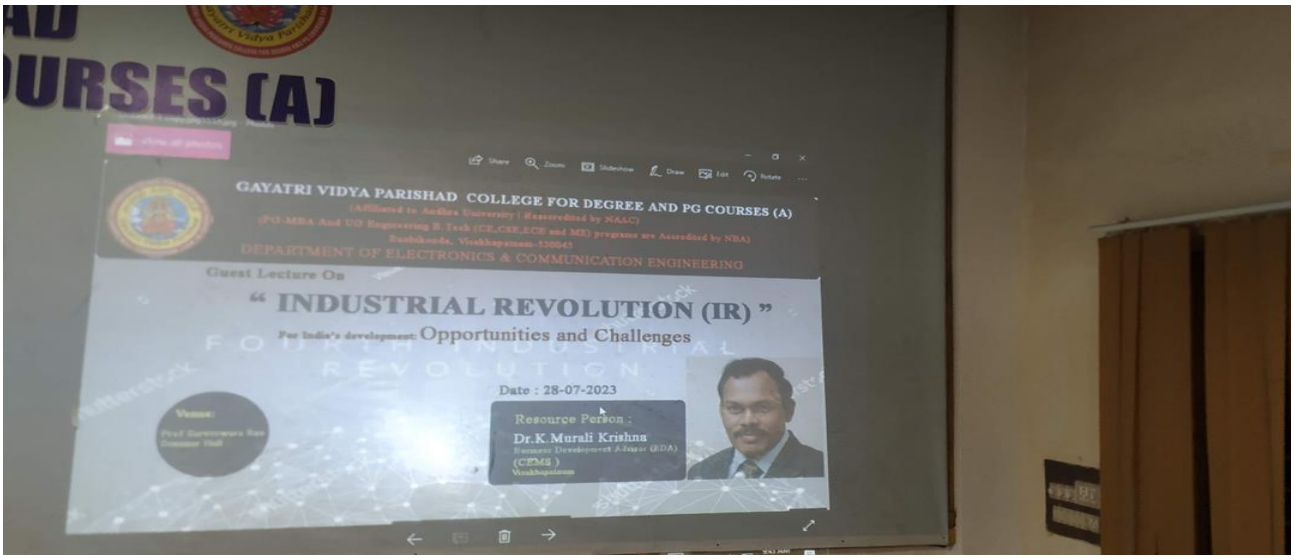
# Participants at the valedictory session of 5 Days

# GUEST LECTURE ON ‘‘INDUSTRIAL REVOLUTION’’ for INDIA’s Development: Opportunities and Challenges

On 28/07/2023 a Guest lecture was conducted by ECE department of GVPT at 10:30 AM at college Seminar Hall till 1:00 PM. The resource person of this lecture was **Dr. K.Murali Krishna**, Business Development advisor CEMs, Visakhapatnam

Prof S Krishna Veni ,HOD, ECE introduced about the resource person and spoke few achievements of. **Dr. K.Murali Krishna**, She addressed the resource person on to the stage for the lecture and went through the lecture





**Dr. K.Murali Krishna**, started his lecture by introducing the recent developments in industry 4.O with model examples were explained.

Then he addressed about the technique in the fields of diverse areas like industry automation integration, Automobiles, Agriculture, Robotics, Navigational and mobile communication and importance industrial revolution and its impact in the real life situations. Later at the end of the lecture clarified the doubts raised by the students.

The formal vote of thanks for the guest lecture was given by Dr V Adinarayana Associate Professor ECE department.

# Report on one day industrial visit to AMTZ on 25.07.2023

Department of Electronics and Communication Engineering in association with IETE students forum conducted one day industrial visit to Andhra Pradesh medtech Zone limited (AMTZ) for all the III/IV B.Tech ECE students on 25.07.2023.

The main objective of the visit is to makes students aware about how various equipment works in the medical field which was used in the company.

## Andhra Pradesh medtech zone (AMTZ) :


Andhra Pradesh MedTech Zone(AMTZ) is a medical technology park with Common Manufacturing Facilities & Common Scientific Facilities that include specialized laboratories, warehousing and testing centers such as the Center for Electromagnetic compatibility and safety testing, Center for Biomaterial Testing, Center for 3-D printing, Centers for Lasers, MRI Magnets, Gamma Irradiation, Molds, and many other industrial service centers.

It currently houses the Bio Valley Incubation Council, funded by the Department of Biotechnology and kalam institute of health technology.

It is located in Nadupuru village area of Visakhapatnam adjacent to the Visakhapatnam Steel plant. The AMTZ is spread over an area of 270 acres and it has over 100 manufacturing units. Its foundation was laid on 19 August 2016 and inaugurated on 13 December 2018.

The key USPs of the campus are its Common Scientific Industrial Laboratories such as

1. Center for Biomaterial Testing
2. Center for 3-D printing
3. Artificial limb centre
4. MRI coils
5. Gamma Irradiation
6. Moulding and
7. many other industrial service centers
8. centre for electromagnetic compatibility and safety testing

## BIOME: Centre for biomaterial testing

- The state-of-the-art laboratory for Biomaterials at AMTZ, has the following testing capabilities
  1. Sterility Evaluation
  2. Histopathology Evaluation
  3. Physiochemical Evaluation
  4. Accelerated Aging
  5. Package Validation
- This facility is primarily intended for medical device industry for physio-chemical evaluation as well as biological evaluation of sample.
- Industries like Chemical, Polymer and Pharmaceuticals etc. can also avail this facility to evaluate the characteristics of materials using spectroscopic and imaging modalities like SEM, TEM etc.


## PYRAMED

In pyramed, the designing of PCB and dialysis machine functionality are demonstrated.

**PCB Manufacturing Process Steps**

Step 1: Design and Output.

Step 2: From File to Film.

Step 3: Printing the Inner layers

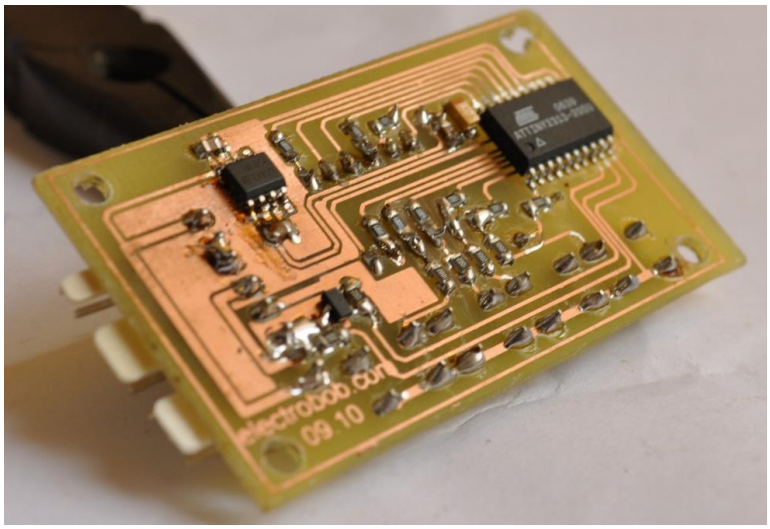
Step 4: Removing the Unwanted Copper.

Step 5: Layer Alignment and Optical Inspection.

Step 6: Layer-up and Bond.

Step 7: Drill.

Step 8: Plating and Copper Deposition.



## COBALTA: Center for Gamma Irradiation

This facility is operated by M/s TUV Rheinland for EMC and Safety testing and certification of medical devices. The Centre for Gamma Irradiation at AMTZ is first of its kind in Andhra Pradesh and the surrounding states and would cater to 15% (INR 4500 Crore) of the Indian Medical Device market. Gamma rays are a form of electromagnetic radiation (EMR). They are the similar to X-rays, distinguished only by the fact that they are emitted from an excited nucleus.

## **3D printing** or **additive manufacturing**

The construction of a three-dimensional object from a CAD model or a digital 3Dmodel. It can be done in a variety of processes in which material is deposited, joined or solidified under computer control, with material being added together (such as plastics, liquids or powder grains being fused), typically layer by layer.

The precision, repeatability, and material range of 3D printing have increased to the point that some 3D printing processes are considered viable as an industrial-production technology, whereby the term *additive manufacturing* can be used synonymously with *3D printing*. One of the key advantages of 3D printing is the ability to produce very complex shapes or geometries that would be otherwise infeasible to construct by hand, including hollow parts or parts with internal truss structures to reduce weight. Fused deposition modeling (FDM), which uses a continuous filament of a thermoplastic material, is the most common 3D printing process in use as of 2020.

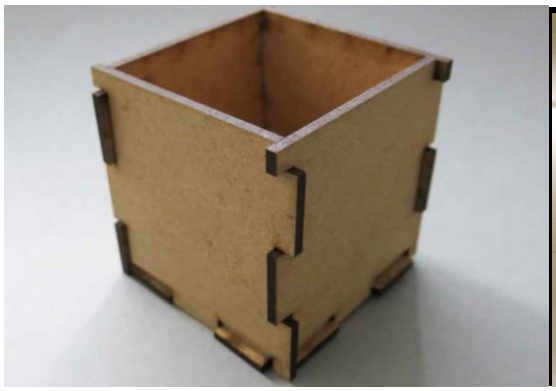
## ARTIFICIAL LIMB CENTRE

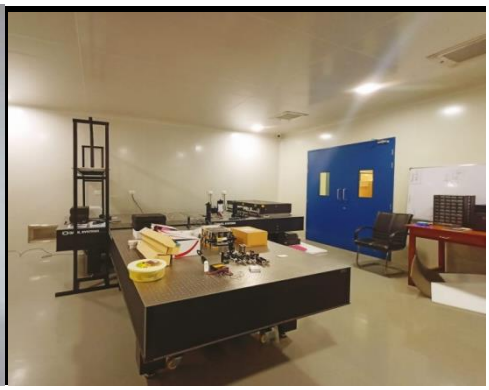
AMTZ partnered with Wakon Healthcare Pvt. Ltd to set up the Artificial Limb Centre at the campus of AMTZ. In this centre, the clinical assessment and examination of the patient are carried out. As per users requirement manufacturing and production of high quality advanced variety of assistive devices such as Lower Limb Prosthetics & Orthotics (i.e. below knee, above knee), Upper limb Prosthetics & Orthotics (i.e. below elbow, above elbow),Spinal Orthosis, Mobility aids (I.e. wheelchairs, tricycles, motorized wheelchairs, standing frame, corner table, commode chair), Compression garments, Cosmetic Restoration Prosthesis etc. Is being carried out under the supervision of AMTZ, Visakhapatnam. The process is extremely transparent and the beneficiaries are often offered same day service while they wait.

## Laser printing

When the time comes to choose the right technology for a project, many elements are involved: application, material, production time and cost.

3D printing has a main advantage over traditional manufacturing techniques: the cost is not driven by the amount of unit you produce which means you can produce a single part or small to medium batches at a lower price than with the injection molding technique for example.





With laser cutting, production time is very short and price is low. The raw material is easy to access and available in many material types (metals, plastics, and acrylics, cardboard). Moreover, you can add different types of engraving on your material.

All the students have thanked the department for organizing this one day industrial visit which provided them a platform to shape their career towards the industry requirements. The department has thanked the authorities of AMTZ for according the permission and guided the students.


OUTCOME:

The one-day industrial visit to Andhra Pradesh MedTech Zone (AMTZ) on July 25, 2023, provided III/IV B.Tech ECE students with valuable insights into advanced medical technology and its applications. The visit enhanced students' understanding of various medical equipment and manufacturing processes, including biomaterial testing, PCB design, gamma irradiation, and 3D printing. The students expressed their appreciation for the opportunity to explore these technologies and gain practical knowledge relevant to their future careers. The department acknowledged the support of AMTZ authorities for facilitating the visit and providing valuable guidance to the students.

**TECHTRONIX 2024: A Two-Day Workshop on Artificial Intelligence**

Date: 20th March 2024 - 21st March 2024

The TECHTRONIX fest held on 20th and 21st March 2024 hosted an insightful two-day workshop on Artificial Intelligence (AI). Organized by the ECE Department, the workshop aimed to familiarize students with the fundamentals of AI, machine learning, deep learning, and practical coding in Python.

Day One Highlights:

The workshop commenced with **Mr. B V Raju**, a distinguished expert from Datapro, introduced by **Mr. Raju Egala**, an assistant professor of the ECE Department. Mr. B V Raju laid the groundwork by elucidating the basics of AI to the eager students, providing them with a comprehensive understanding of its principles and applications.

**Mr B V Raju, AI Expert Delivering Lecture**

**Students attended to Workshop**

Day Two:

The second day began with a focus on machine learning and deep learning concepts, where Mr. B V Raju explored into advanced topics and their real-world implementations. He further elaborated on Python coding, an essential tool in AI development, enabling students to grasp practical coding techniques.

Practical Sessions:

In the afternoon sessions, students actively engaged in hands-on exercises, applying the concepts learned during the morning sessions. This practical approach allowed them to reinforce their understanding and gain valuable coding experience in Python for AI applications.

Feedback and Appreciation:

At the conclusion of the workshop, Mr. **Raju Egala** expressed gratitude to **Mr. B V Raju** for his exceptional guidance and insightful sessions. Feedback collected from the students reflected their appreciation for the workshop's quality, relevance, and interactive learning experiences.

Overall, the TECHTRONIX 2024 workshop on AI proved to be a resounding success, equipping participants with essential knowledge and practical skills crucial in the ever-evolving field of Artificial Intelligence.

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DEPARTMENT OF ECE PRESENTS

# TECHTRONIX 2K24

## National level symposium

On

## March 20 & 21

**Faculty Co-ordinators:**

**Mr. S. Venkatesh**

**Mrs. A. Aruna**

**Student Co-ordinators:**

**B. V. Sai Teja -9989454779**

**D. Bhargavi-9963706596**

**G. Surya-9381085895**

| HOD-ECE | I/c Director | Principal |
|---|---|---|
| Dr. P. A. Nageswara Rao | Dr. P. V. Vinay | Prof. S. Rajani |

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## DEPARTMENT OF ECE PRESENTS

# TECHTRONIX

National level symposium

# 2K24

On

March 20 & 21

### Technical events

Poster Presentation
Idea's Unfold
Project Expo
Workshop
Quiz Buzz

### Non-technical events

Search for Riches
Native Charm
Scene Replica
Game Clash
Foodie Fun
Snapshot

Faculty Co-ordinators:
Mr. S. Venkatesh
Mrs. A. Aruna

Registration Fee:400/-
Including workshop Registration Fee:500/-

Scan QR Code for Registration

@TECHTRONIX_2K24

Student Co-ordinators:
B. V. Sai Teja -9989454779
D. Bhargavi-9963706596
G. Surya-9381085895

**HOD-ECE**
**Dr. P. A. Nageswara Rao**

**I/c Director**
**Dr. P. V. Vinay**

**Principal**
**Prof. S. Rajani**

# POSTER LAUNCH

The poster of launch ECE Fest techtronix took place in the presence of Prof. S. Rajini principal Gayatri Vidya Parishad College for Degree and Pg. Courses, Rushikonda accompanied by the Head of The Department of ECE and Faculty along with students



The poster of launch ECE Fest techtronix took place in the presence of Prof. P. V. Vinay Director E&T Gayatri Vidya Parishad College for Degree and Pg. Courses, Rushikonda accompanied by the Head of The Department of ECE and Faculty along with students

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ENGINEERING AND TECHNOLOGY PROGRAM

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INVITES YOU TO THE INAUGURATION OF

# TechtroniX 2k24

CHIEF GUEST

## SHRI .DILIP YENNI

Technical Manager, Adept-Quest Global
Visakhapatnam

AC CENTRAL AUDITORIUM

MARCH 20, WED

10.00 AM

DR. P.A. NAGESWARA RAO
HOD- ECE

DR. P.V. VINAY
I/C DIRECTOR

PROF. S RAJANI
PRINCIPAL

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
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# TECHTRONIX-2K24

| Inauguration Program Schedule | |
|---|---|
| 10:00 AM | Welcoming the guests on the Dias |
| 10:10 AM | Lightening of the Lamp |
| 10:15 AM | Prayer song |
| 10:18 AM | Address by the HOD |
| 10:22 AM | Address by the Director |
| 10:25 AM | Address by the Principal |
| 10:35 AM | Address by the GVP Members |
| 10:45 AM | Introduction to Chief guest |
| 10:48 AM | Address by the Chief guest |
| 10:52 AM | Felicitation of the Chief guest |
| 10:55 AM | Vote of thanks and closing remarks of the Inauguration session |

# INAGURATION

An Inaugural ceremony for the Techtronix was held on Wednesday 20th of March 2024 at 10:00 a.m. at Central auditorium. The Program started as the Chief guest and other Dignitaries arrived at the college premises at 9:50 am. Dr. P A Nageswara Rao Head of The Department Electronics and Communication engineering welcomed guests Sri Dileep Yenni technical manager adapt quest-global, Prof. P. Rajaganapthi Garu, Joint Secretary, GVP, Prof. P. V. Vinay Director E&T Programs


The dignitaries stood up as the prayer song is being sung


The dignitaries lightening the lamp.

The program was followed by lightening of the lamps and prayer song. The chief guest enlightened the students about the importance of VLSI domain and various aspects the required for bright future in the VLSI domain. The program marked it conclusion by 11:00 am.

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
ENGINEERING AND TECHNOLOGY PROGRAM
GAYATRI VIDYA PARISHAD COLLEGE FOR DEGREE & P.G. COURSES (A)
RUSHIKONDA, VISAKHAPATANAM-530045 | WEBSITE: www.gvpcdpgc.edu.in
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(PG-MBA and UG Engineering B. Tech (CE, CSE, ECE and ME) Programs are accredited by NBA)

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

## SCHEDULE FOR TECHTRONIX-2K24 (MARCH 20th-21st, 2024)

| Date/Day | Technical events | Non-Technical events |
|---|---|---|
| **20-03-2024 (Wednesday)** | **Event name: Workshop on Artificial Intelligence**<br>Time: 11:00 A.M to 1:30 PM<br>Place: Room no-821 | **Event name: Scene replica & Photography**<br>Time: 02:00 P.M to 04:00 PM<br>Place: Room no-805 |
| | **Event name: Technical Quiz**<br>Time: 11:00 A.M to 1:30 PM<br>Place: Room no-806 | **Event name: Foodie fun**<br>Time: 03:00 P.M to 05:00 PM<br>Place: Room no-812 |
| | **Event name: Ideathon**<br>Time: 02:00 P.M to 04:00PM<br>Place: Room no-807 | |
| | **Event name: Poster Presentation**<br>Time: 02:30 P.M to 04:00PM<br>Place: Room no-DH3 | |
| **21-03-2024 (Thursday)** | **Event name: Workshop on Artificial Intelligence**<br>Time: 09:30 A.M to 1:00 PM<br>Place: Room no-821 | **Event name: Treasure hunt**<br>Time: 09:30 A.M to 1:00 PM<br>Place: Open Area |
| | **Event name: Project Expo**<br>Time: 10:00 A.M to 1:00 PM<br>Place: Room no-810,811 | **Event name: Free fire**<br>Time: 10:30 A.M to 12:30 PM<br>Place: Room no-822 |
| | | **Event name: Native Charm**<br>Time: 02:00 A.M to 02:30 PM<br>Place: Central Auditorium |
| **21-03-2024 (Thursday)** | **Event name: Valedictory, Prize distribution Culturals.**<br>Time: 02:30 P.M to 05:00 PM<br>Place: Central Auditorium | |

**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**
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# TECHTRONIX-2K24

Organizers for Techtronix 2k24:

| | | | | |
|---|---|---|---|---|
| 1. | 5201421005 | D. Bhargavi | 9963706596 | |
| 2. | 5201421015 | V. V. N. S. Gopal | 8985083816 | Faculty Coordinator |
| 3. | 5201421026 | V. Surendra | 8367741481 | Mr. S.Venkatesh |
| 4. | 5201421027 | M. Dibya Jyothi | 7382376120 | Mrs. A Aruna |
| 5. | 5211421022 | G. Surya | 9381085895 | |
| 6. | 5211421036 | M. Prasanthi | 7981730487 | |

Financial Committee:

| | | | | |
|---|---|---|---|---|
| 1. | 5201421002 | B. V. Sai Teja | 9989454779 | Faculty Coordinator |
| 2. | 5201421016 | V. D. S. Venkat | 8247641515 | Mr. S.Venkatesh |

Campaigning Committee:

| | | |
|---|---|---|
| 1. | 5201421012 | R. Seetha Rama Swamy |
| 2. | 5201421047 | K. Rishi |
| 3. | 5201421062 | K. Sai Prasad |
| 4. | 5201421002 | B. V. Sai Teja |
| 5. | 5201421008 | G. Jessica |

Food committee:

| | | | |
|---|---|---|---|
| 1. | 5201421005 | D. Bhargavi | Faculty Coordinator |
| 2. | 5211421005 | M. Manikanta Naidu | Dr. V. Adinarayana |
| 3. | 5211421024 | G. Pavan | All Techinicians |
| 4. | 5221421091 | U. Mohan | |
| 5. | 5221421082 | S. Gunakar | |

Stage inaugural/valedictory/Decoration committee: Faculty Coordinator

| | | | |
|---|---|---|---|
| 1. | 5211421011 | B. Priyanka (8688299844) | Dr. V. Adinarayana, |
| 2. | 5211421036 | M. Prasanthi (7981730487) | Mrs. A Aruna |
| 3. | 5201421005 | D. Bhargavi | Mrs. G. Sowjanya |
| 4. | 5201421017 | A. Sahithi | |

Flashmob & culturals committee:

| Faculty Coordinator | |
|---|---|
| 1. 5201421010 E. Ankitha | Mrs. G. Sowjanya |
| 2. 5201421007 J. Joshma Nancy | Mrs. K Deepthi |
| 3. 5211421027 k. Sri Deepika | Mrs. V Sridevi |

| Invitations/Certifications/prize distribution: | Faculty Coordinator |
|---|---|
| 1. 5201421004 D.S.L Prasanna | Mr. A. Mahesh Babu |
| 2. 5201421002 B. V. Sai Teja | Mrs. M Tharangini |
| 3. 5221421035 Hyndhavi | |
| 4. 5221421028 Shreepurva | |
| 5. 5221421038 Harshitha | |
| 6. 5201421063 M Tharangini | |

**TECHTRONIX 2024: A Two-Day Workshop on Artificial Intelligence**

Date: 20th March 2024 - 21st March 2024

The TECHTRONIX fest held on 20th and 21st March 2024 hosted an insightful two-day workshop on Artificial Intelligence (AI). Organized by the ECE Department, the workshop aimed to familiarize students with the fundamentals of AI, machine learning, deep learning, and practical coding in Python.

Day One Highlights:

The workshop commenced with **Mr. B V Raju**, a distinguished expert from Datapro, introduced by **Mr. Raju Egala**, an assistant professor of the ECE Department. Mr. B V Raju laid the groundwork by elucidating the basics of AI to the eager students, providing them with a comprehensive understanding of its principles and applications.

**Mr B V Raju, AI Expert Delivering Lecture**

**Students attended to Workshop**

Day Two:

The second day began with a focus on machine learning and deep learning concepts, where Mr. B V Raju explored into advanced topics and their real-world implementations. He further elaborated on Python coding, an essential tool in AI development, enabling students to grasp practical coding techniques.

Practical Sessions:

In the afternoon sessions, students actively engaged in hands-on exercises, applying the concepts learned during the morning sessions. This practical approach allowed them to reinforce their understanding and gain valuable coding experience in Python for AI applications.

Feedback and Appreciation:

At the conclusion of the workshop, Mr. **Raju Egala** expressed gratitude to **Mr. B V Raju** for his exceptional guidance and insightful sessions. Feedback collected from the students reflected their appreciation for the workshop's quality, relevance, and interactive learning experiences.

Overall, the TECHTRONIX 2024 workshop on AI proved to be a resounding success, equipping participants with essential knowledge and practical skills crucial in the ever-evolving field of Artificial Intelligence.

# Techtronix Project Expo Report

**FACULITY COORDINATOR:**

**Dr. Ch. Manohar Kumar**
Associate Professor,
B. Tech, M. Tech, PhD

**STUDENT COORDINATOR**

**M.Dibyajyothi** (4TH YEAR)
M.Sai Kiran (4th year)

## EXAMINERS

**Prof. P.V. Sarma**
Honary Professor
& Director (GVPCDPGC)
MA, MSc, Ph.D.

**Prof. S. Rajani**
Senior Professor &
Principal (GVPCDPGC)
MBA, Ph. D, UGNET(JRF)

**Dr.I.S. Pallavi**
Professor &
Director MCA
M.tech.,Ph.d.

**Dr.P.Jyotsna Devi**
Professor &
HOD of Civil engineering
B.E,M.E,Ph.D

Mrs.P.Pallavi
Assistant Professor,
B.Tech, M.Tech.

THE PROJECT EXPO WAS CONDECTED ON **21/03/2024 (11:00AM-01:00PM)**.THE PROJECT EXPO CONDECTED WITH **130 MEMBERS (2ND,3RD & FINAL YEARS)**.WE HAVE DIVIDED 3 TO 5 MEMBERS FOR A BATCH.SO WE HAVE CONDECTED WITH 27 BATCHS. WE HAVE CONDUCTED IN **MPMC AND AC DC LABS** .

**THE WINNERS BATCH MEMBERS ARE:**

Batch -5 Smart Platform Crossing [1st year A]

1. A. Abdul Arif (1st YEAR ECE)
2. M.Manasa (1st YEAR ECE)
3. K.pavani (1st YEAR ECE)

Batch -8 Fire Extinguisher using Water Sensor & Smart Solar [ 2nd year B]

1. Rithika (6301870117)
2. Vijayanand
3. Rithika
4. Ananth
5. Adira
6. Dinesh

**THE RUNNERS BATCH MEMBERS ARE:**

Batch 7: DIY Ventilator Using Arduino [ 2nd year B]

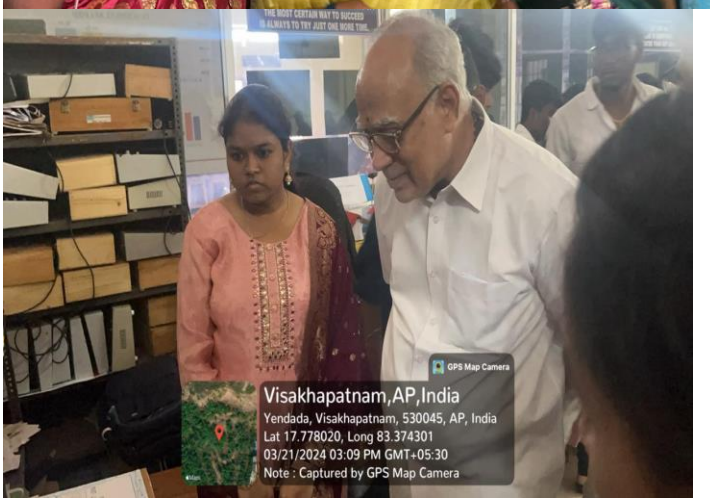
1. S. Ram Prasad
2. S. Gunakar
3. Y. Hari Krishna (7674972742)
4. T. Harshitha
5. P. Ganesh

Batch 14: Energy saving by sensor Technology[Lankapalli Bullayah College)

1. P. Adithya
2. P. Purushottam
3. T. Surya Teja
4. W. Harshavardan

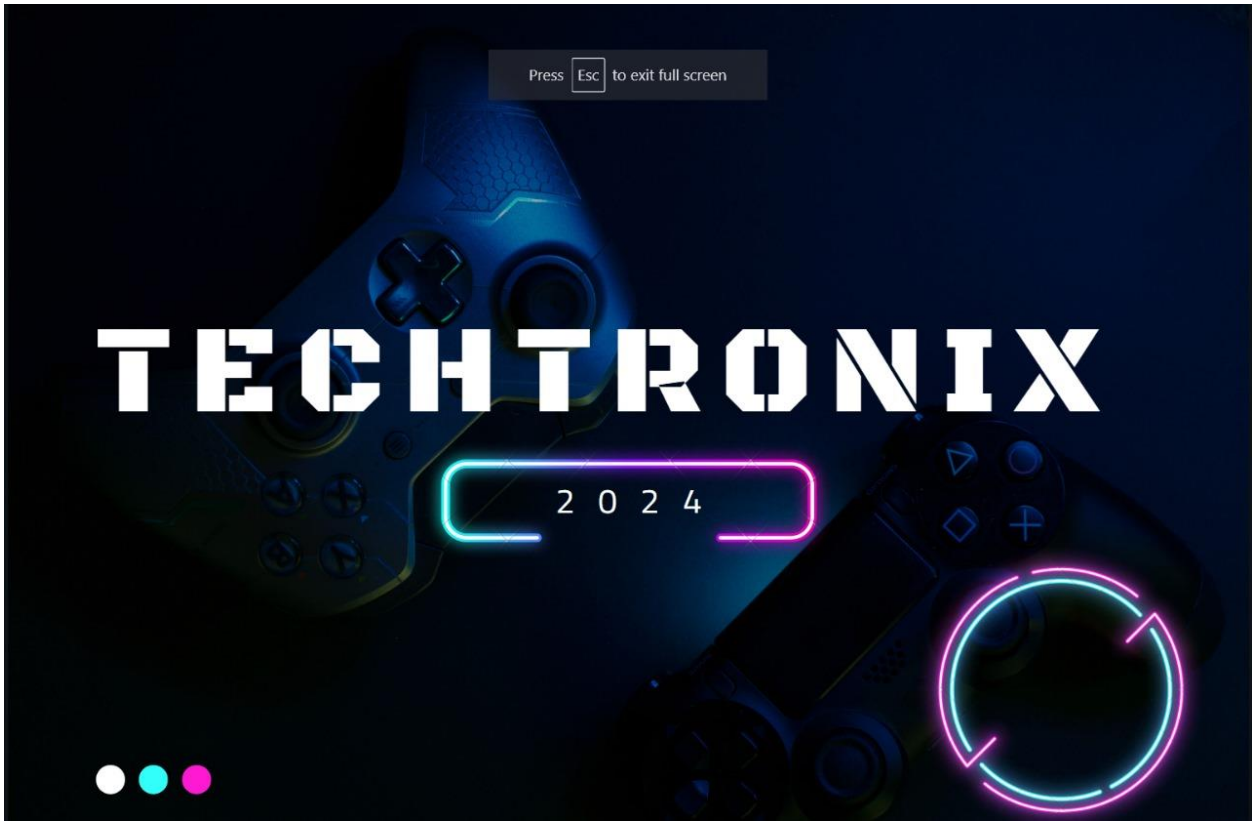
# PHOTOS


GPS Map Camera
Visakhapatnam,AP,India
Yendada, Visakhapatnam, 530045, AP, India
Lat 17.777866, Long 83.374900
03/21/2024 12:15 PM GMT+05:30
Note : Captured by GPS Map Camera


GPS Map Camera
Visakhapatnam,AP,India
Yendada, Visakhapatnam, 530045, AP, India
Lat 17.778020, Long 83.374301
03/21/2024 03:09 PM GMT+05:30
Note : Captured by GPS Map Camera


GPS Map Camera
Visakhapatnam,AP,India
Yendada, Visakhapatnam, 530045, AP, India
Lat 17.777866, Long 83.374900
03/21/2024 12:15 PM GMT+05:30
Note : Captured by GPS Map Camera


GPS Map Camera
Visakhapatnam, Andhra Pradesh, India
Gayatri Vidya Parishad , Technical Campus, Q9GG+X38, Endada,
Visakhapatnam, Andhra Pradesh 530045, India
Lat 17.777476°
Long 83.375202°
21/03/24 03:08 PM GMT +05:30
Google


Press Esc to exit full screen
TECHTRONIX
2024

**GAYATRI VIDYA PARISHAD COLLEGE FOR DEGREE & P.G. COURSES (A)**
**RUSHIKONDA, VISAKHAPATANAM 530045.**
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# ENGINEERING AND TECHNOLOGY PROGRAM
## Department of Electronics and Communication Engineering

### TECHTRONIX – 2024

**Report on Poster Presentation- 20th March, 21st March, 2024**

At the TechTronix-2024 event (From 20th March to 21st March), the organizers conducted several events, one of them the POSTER PRESENTATION conducted on 20th March,2024 in Drawing Hall-3 in Dept. of Electronics and Communication Engineering. The poster presenation theme is about "THE WOMEN EMPOWERMENT" Faculty coordinator Mrs.K.Deepthi and student organizers A.sahithi sree(5201421017) (4/4), Vijayanand (5221421007) (2/4), V. Varshitha(5221421094) (2/4) have conducted the Poster Presentation

**Dr. S. Krishna Veni, Dr P.A. Nageswar Rao,HOD. Witnessing the poster presentation**

An overwhelming response from the students has made the event successful. The students have exhibited excellent Poster presentation



2 Students were shortlisted as winners.

1st Prize was grabbed by ‘K.Pavani’ ‘M.Manasa’
2nd Prize was grabbed by ‘Y.Ranga sai sri’

# PHOTOGRAPHY
# AND
# SCENE REPLICA REPORT

A 2 Day Techfest is conducted by the Department of Electronics And Communication Engineering "TECHTRONIX-2K24" On March 20-3-24 & 21-3-24. As a part of this Techfest we had conducted a competition PHOTOGRAPHY AND SCENE REPLICA. As a part of this event we had invited some of the judges to decide winners.

As the part of this competition the winner decided by the judges are:

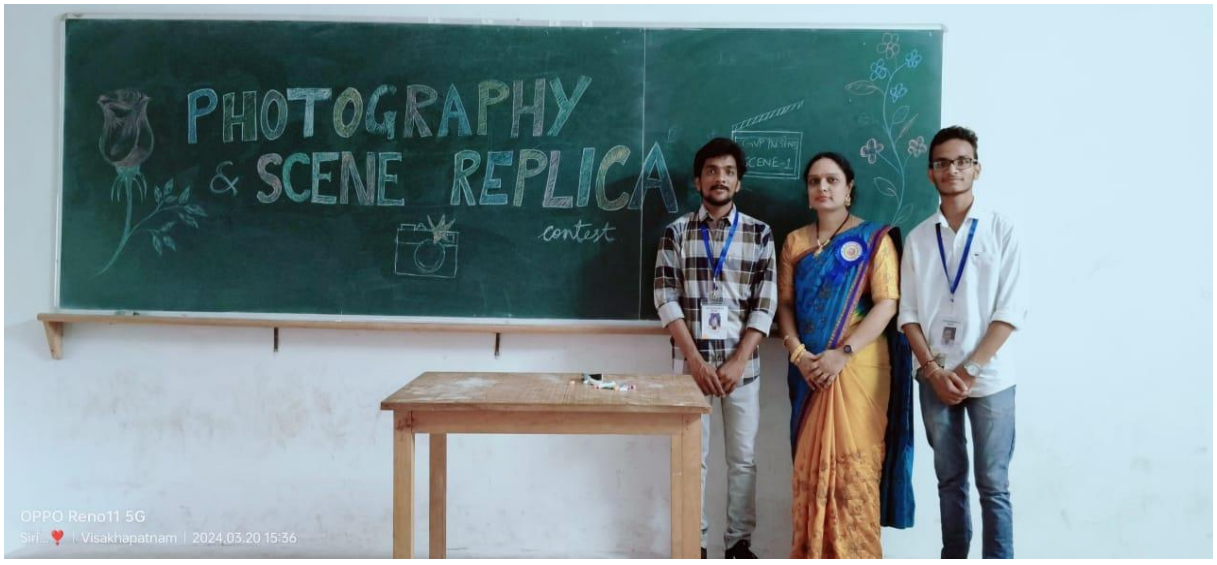
- For scene Replica Are:
    1. Chaithanya ram (3rd Year)
- For snapshot Are:
    1. P. Dinesh (2nd Year)
    2. D. Siva mani (2nd Year)

Faculty co-ordinator:

Mrs. V. Sridevi
Assistant Professor,
B.Tech, M.Tech

Student co-ordinators:

1. S. Yaswanth (4th Year)
2. K.Sai prasad (4th Year)


Event coordinators

Student participates

Photography 1st prize picture

Photography 2nd prize picture

# TREASURE HUNT

## FACULITY COORDINATOR:

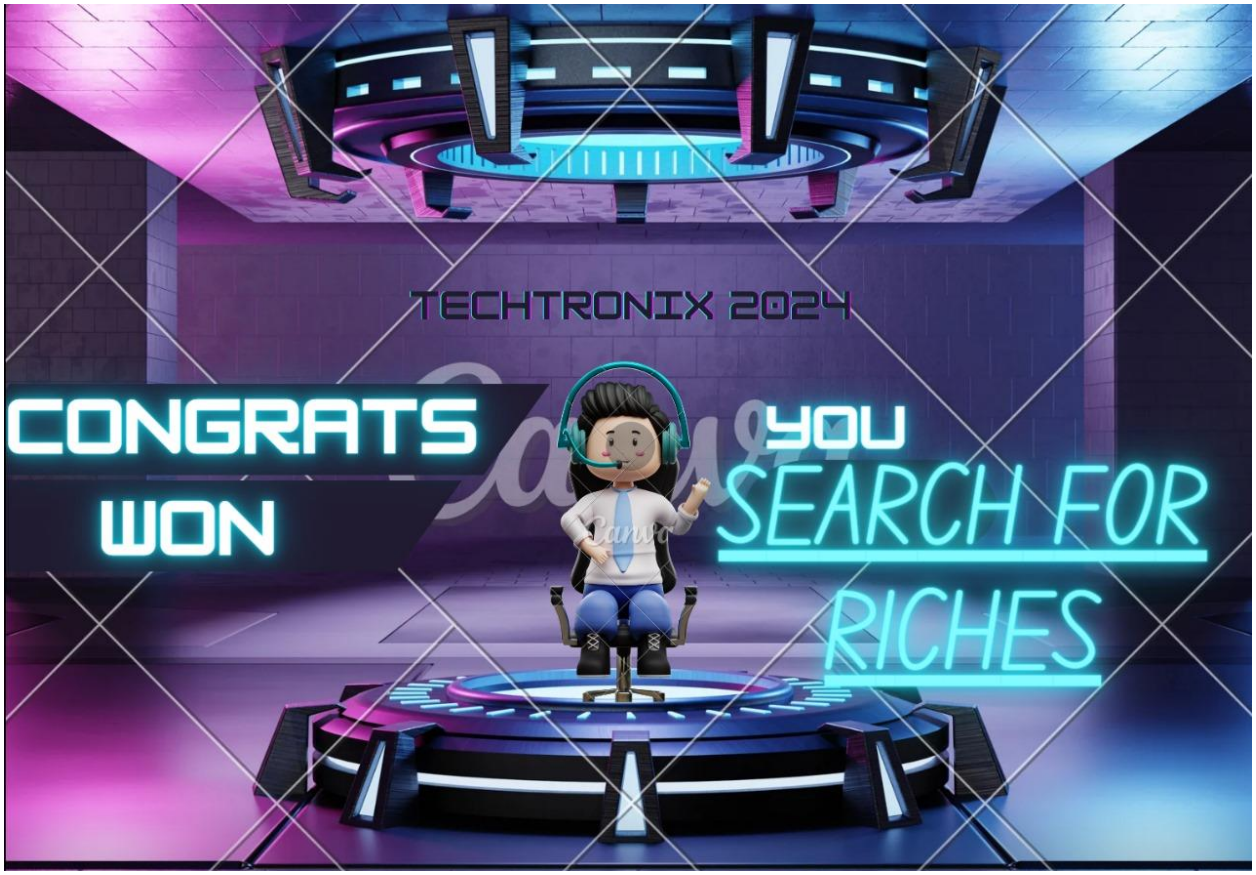
**Dr. Ch. Manohar Kumar**
Associate Professor,
B. Tech, M. Tech, PhD

## STUDENT COORDINATOR

**R.Seetha rama swamy** (4TH YEAR)
**K.Rishi** (4th year)

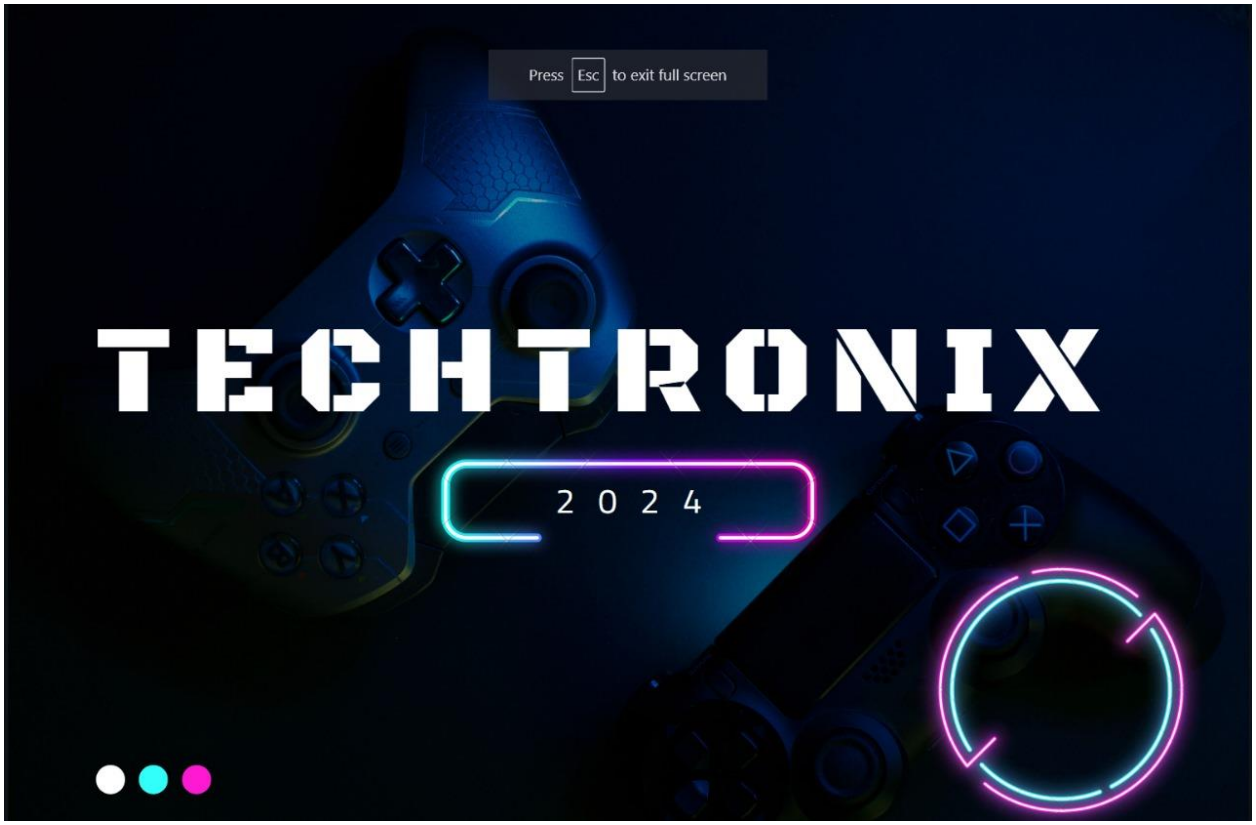
THE TREASURE HUNT WAS CONDECTED ON **21/03/2024 (11:00AM-01:00PM)**.THE TREASURE HUNT IS CONDECTED WITH **33 MEMBERS (2ND,3RD & FINAL YEARS)**.WE HAVE DIVIDED 3 MEMBERS FOR A BATCH.SO WE HAVE CONDECTED WITH 11 BATCHS. WE HAVE CONDUCTED THIS EVENT BY DIVIDING THEM INTO 4 LEVELS, AMONG WHICH 2 ARE CONDUCTED IN **PROF. SARVESHWAR RAO SEMINAR HALL** AND REST 2 IN THE CAMPUS AREA.


**THE WINNERS BATCH MEMBERS ARE:**




1. A.MANI SANDEEP (2ND YEAR ECE)
2. B.VIVEK (2ND YEAR ECE)
3. B.PRANEETH (2ND YEAR ECE)

**THE RUNNERS BATCH MEMBERS ARE:**




1. K.HEMANTH (2ND YEAR ECE)
2. T.TULASI RAM (2ND YEAR ECE)
3. V.VARSHITHA (2ND YEAR ECE)

# FOODIE FUN

At the Techtronix-2024 event (20&21th March),the organizers conducted several events, one of them the FOODIE FUN conducted on 21th March,2024 in Electronic Device and Circuit Lab in Dept. of Electronics and Communication Engineering. Faculty coordinators Mrs. P. N. S. Sailaja and student organizers B.Vyshnavi(4/4), G. Jessica(4/4), B. Priyanka(3/4) have conducted the FOODIE FUN.

The List of the Foods prepared for Foodie Fun Event:

| S. NO | Name of the Students | Dishes |
|---|---|---|
| 1 | P. Divya Gayathri | Fruit salad& |
| | G. Manikumari | Dates laddu |
| 2 | A. Nivas | |
| | Lakshmi Suri Narayana | Muri Mixture |
| | A. Durga Prasad | |
| 3 | K. Pavani | Chocolate cake |
| | M. Manasa | &Sandwich |
| 4 | P. Supriya | Keer |
| | Kusuma Latha | |
| 5 | M. Tharangni | Coffee |

1st Prize was grabbed by K. Pavani and M. Manasa for Chocolate Cake and Sandwitch.

2nd Prize was grabbed by A. Nivas, Lakshmi Suri Narayana and A. Durga Prasad for Muri Mixture

Special Icon was grabbed by P. Supriya and Kusuma Latha For Keer

# NATIVE CHARM

At the Techtronix-2k24 event (20&21st March), the organizers conducted several events, one of them is the Native Charm conducted on 21st March, 2024 in central auditorium by Dept. of Electronics and Communication Engineering. Faculty coordinators Dr. S. Krishna Veni and Mrs. P. N. S. Sailaja and Student Organizers J. Joshma Nancy (4/4), K. Akhila (4/4), P. Akanksha (4/4), K. Deepika (3/4) have conducted the Native Charm. Judgement is given by Prof. P. V. Sarma garu, RND gvpcdpgc, Prof. S. Rajani mam, principal of gvpcdpgc.


An overwhelming response from the students has made the event successful.

Bengali

Maharashtra

Punjab

Kerala

Gujarat

Tamil Nadu

Andhra Pradesh

List of the Students participated in Native charm:

| S.NO | Name of the Student | State Represented |
|---|---|---|
| 1 | B. Geethika | Maharashtra |
| 2 | A. Kowsalya | Maharashtra |
| 3 | U. Kishore Kumar | Kerala |
| 4 | B. Tejeswari | Kerala |

| | | |
|---|---|---|
| 5 | W. Yaswanth | Tamil Nadu |
| 6 | S. T. P. Tejaswini | Tamil Nadu |
| 7 | S. Sriparna | Bengali |
| 8 | K. Pavani | Bengali |
| 9 | B. Sai Teja | Andhra Pradesh |
| 10 | B. Sravya | Andhra Pradesh |
| 11 | G. Harshitha | Punjab |
| 12 | G. Vasanth | Punjab |
| 13 | P. Sai Tej | Gujarat |
| 14 | V. Sai Varshitha | Gujarat |

A total of 14 Students participated in the Native Charm Event in which 2 students were shortlisted as winners.

1st Prize was grabbed by ‘B. Geethika’ for representing Maharashtra.

2nd Prize was grabbed by ‘K. Pavani’ for representing Bengali.

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# TECHTRONIX-2K24

| Valedictory Program Schedule |
|---|
| Native Charm Event |
| Welcoming the guests on the Dias |
| Address by the HOD |
| Address by the Prof .S. Krishna veni |
| Address by the Dean, Placement & Career Guidance |
| Address by the I/c Director |
| Address by the Principal |
| Address by the Prof. P. V. Sarma, Director R&D |
| Prize distribution |
| Vote of thanks and closing remarks of the Valedictory session |
| Cultural Events |

# VALEDICTORY

On 21st of March 2024 valedictory function techtronix was held. Prof. P. V. Sarma garu Director R&D, Prof. S. Rajini, principal Gayatri Vidya Parishad College for Degree and Pg. Courses, Sri D. Giridhar, Dean T&P, Prof. P. V. Vinay, Director E&T, Dr. P A Nageswara Rao Head of The Department Electronics and Communication, Dr. S. Krishna Veni, Professor ECE department presided over the event and delivered their Valedictory address.


The guests of event during the valedictory


The winners of the events received the certificates from the chief guest

The program was followed by cultural events. Around 300 students of ECE department participated enthusiastically in the organized events and made it successful.

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**
**ENGINEERING AND TECHNOLOGY PROGRAM**

**GAYATRI VIDYA PARISHAD COLLEGE FOR DEGREE AND P.G COURSES(A)**

**RUSHIKONDA, VISAKHAPATNAM – 530045**

**Date: 23rd June 2023**
**Topic: Value Added Course on Embedded System and IoT**

**Resource person: Mr. K. Bapuji**

**(**CEO, Appleton Innovations)

**REPORT:**

The Department of Electronics and Communication Engineering organized a seminar of Value Added Course on Embedded Systems and IOT on 23rd June 2023 at 11am in association with Appleton Innovations. The seminar was conducted at Prof. Sarveswara Rao Seminar hall and was given by Mr. K. Bapuji, CEO of Appleton Innovations.


**Prof. S. Krishnaveni, addressing the inaugural session and introducing the resource person to faculty and students of ECE 2020-2024 batch**

We have been introduced to the terms Embedded Systems and IOT in depth by **Mr. K. Bapuji**. He taught us the importance and the amount of gravity that this value added course have in improving our skills and mind-set. As the programme is a hands-on course it is quite different from other online courses.

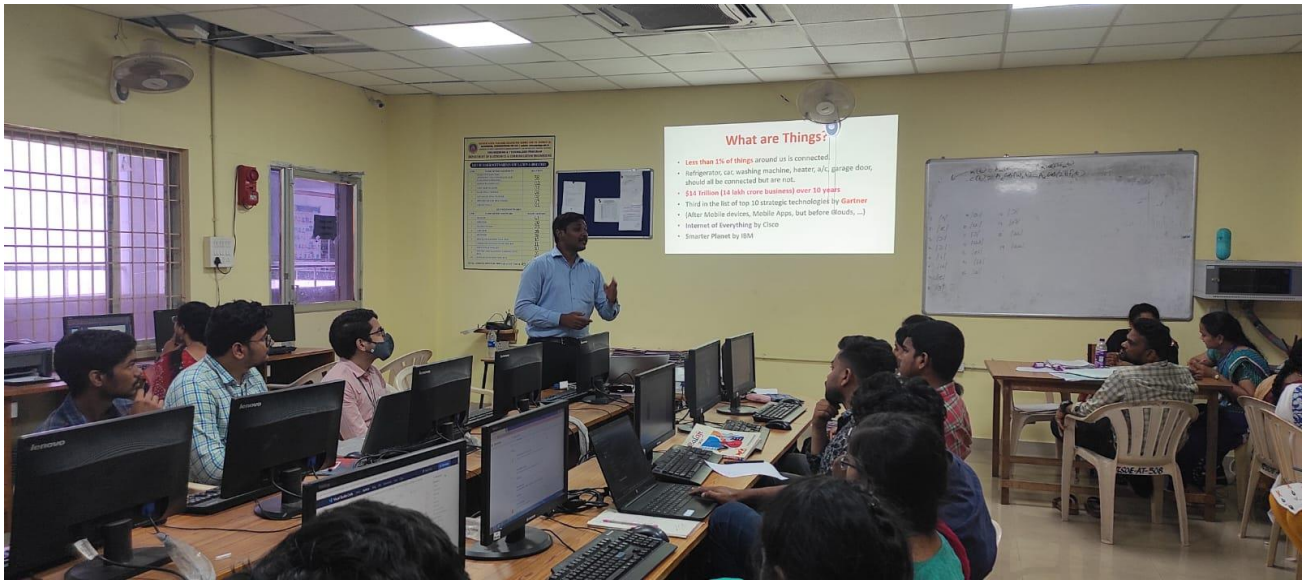
**Students of ECE 2020-2024 batch and Faculty being addressed by Mr. K. Bapuji (**Resource Person**).**

**The workflow of VALUE ADDED COURSE is as follows:**

| Session Number | Date | Topic |
|---|---|---|
| 1 | 30/06/23 | Introduction to IOT |
| 2 | 1/07/23 | Software and Tools Installation |
| 3 | 14/07/23 | Arduino Programming using Tinker CAD |
| 4 | 15/07/23 | Arduino Programming using Tinker CAD |
| 5 | 28/7/23 | Working with ESP32 |
| 6 | 4/8/23 | Sensors interfacing with ESP32 |
| 7 | 5/8/23 | IOT Devices using Blynk |
| 8 | 11/8/23 | Control Devices using Blynk |
| 9 | 18/8/23 | Blynk virtual Smart Bulb |
| 10 | 19/8/23 | Smart Umbrella using Micro python |
| 11 | 26/8/23 | Thing Speak cloud data |


**Mr. K. Bapuji starting off his very first session of Value Added Course on Introduction to IoT**

Our resource person Mr. K. Bapuji has undertaken the session in a slow pace for a better understanding and then brought up to intermediate level. We have been introduced to Internet Of Things step-by-step and learnt about various terms the required for comprehending it in a better way such as.

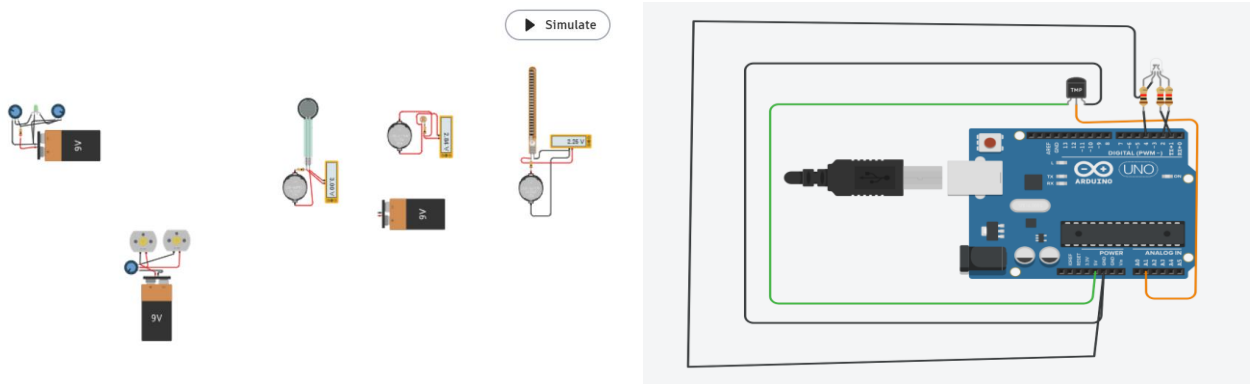



**A session on the required Software tools and how to install and use them**

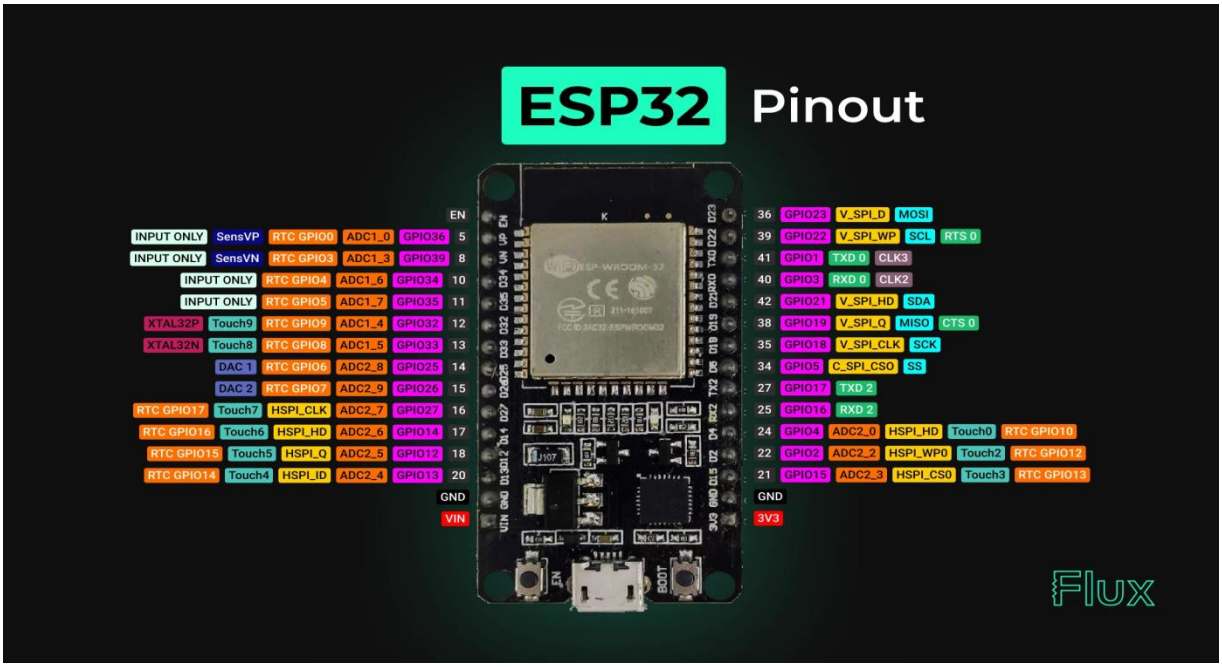
```
void setup()
{
  pinMode(4, OUTPUT);
  pinMode(5, OUTPUT);
  pinMode(3, OUTPUT);
}

void loop()
{
  digitalWrite(4, HIGH);
  digitalWrite(5, HIGH);
  digitalWrite(3, HIGH);
  delay(100);
  digitalWrite(4, LOW);
  digitalWrite(5, HIGH);
  digitalWrite(3, HIGH);
  delay(100);
  digitalWrite(5, HIGH);
  digitalWrite(4, LOW);
  digitalWrite(3, HIGH);
  digitalWrite(5, HIGH);
  digitalWrite(4, LOW);
  digitalWrite(3, LOW);
  delay(100);
  digitalWrite(5, LOW);
  digitalWrite(4, HIGH);
  digitalWrite(3, LOW);
  delay(1000);
  digitalWrite(5, LOW);
  digitalWrite(4, LOW);
  digitalWrite(3, HIGH);
  delay(100);
}
```

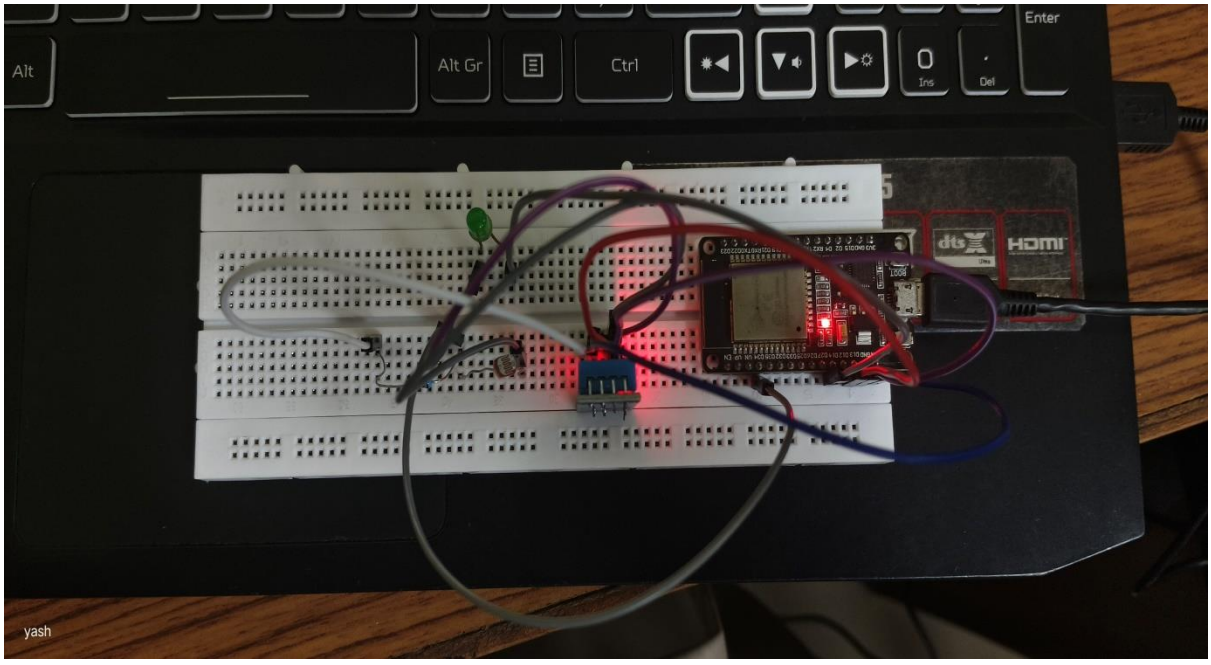
A sample code that students have worked on the successive session on software tools installation




**Various circuits fabricate by students using a virtual platform called TinkerCAD**




**One of the most famous microcontroller with in-built Wi-Fi module in it which has been provided as a tool as a part of Value Added Course.**



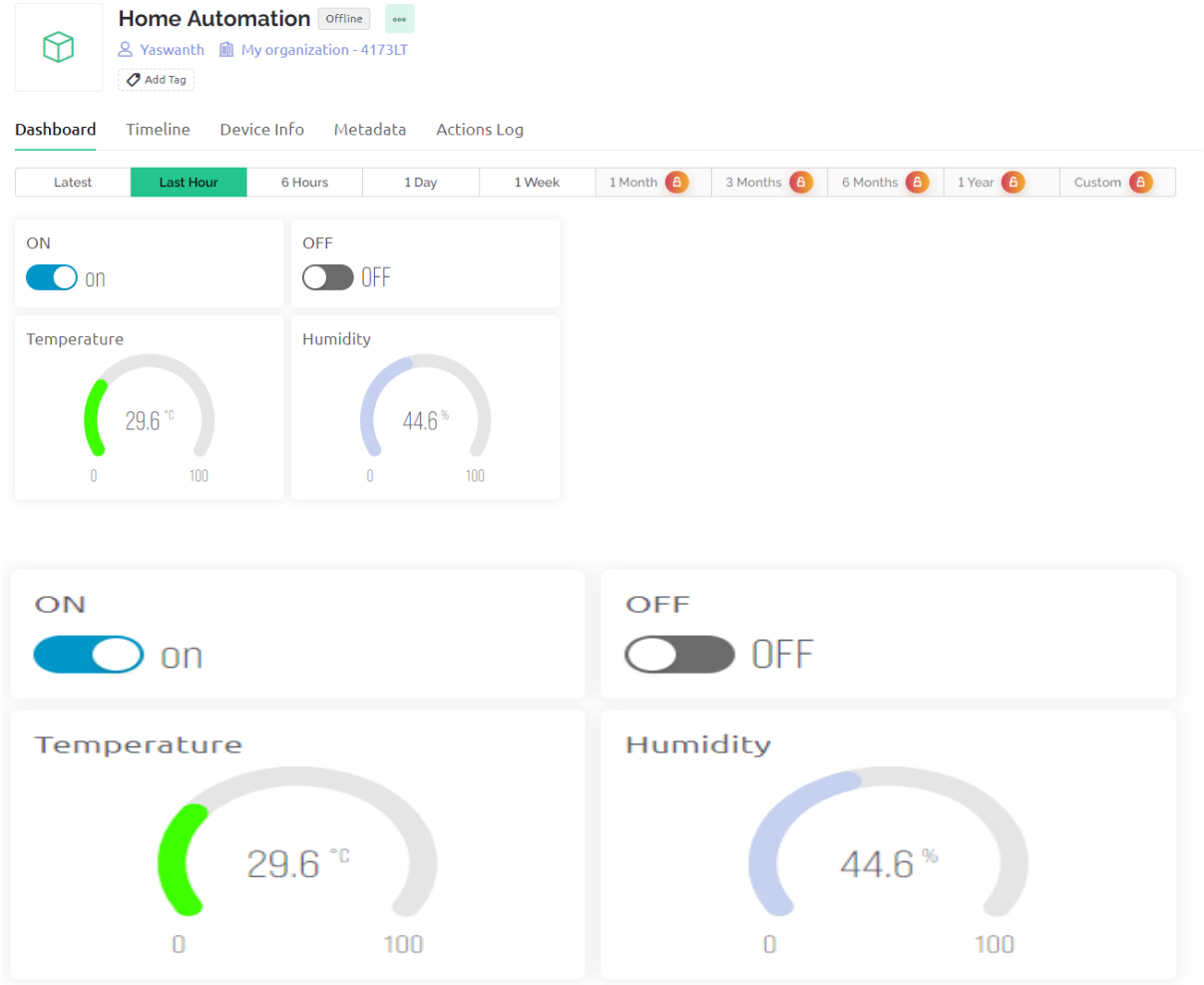
```
#define BLYNK_PRINT Serial
#define BLYNK_TEMPLATE_ID "TMPL33Ye3lCFD"
#define BLYNK_TEMPLATE_NAME "Home Automation"
#define BLYNK_AUTH_TOKEN "RD7SANkuwH0gSnFtlzO9GywNP-NIYbbv"

#include <WiFi.h>
#include <WiFiClient.h>
#include <BlynkSimpleEsp32.h>
#include<DHT.h>
#define DHTPIN 13
#define DHTTYPE DHT11
DHT dht(DHTPIN,DHTTYPE);


char ssid[] = "Mr.Prince";
char pass[] = "Yellaji02";

void setup()
{
  // Debug console
  Serial.begin(9600);
  pinMode(14,OUTPUT);
  digitalWrite(14,HIGH);
  pinMode(12,INPUT);
  pinMode(LED_BUILTIN,OUTPUT);
  dht.begin();
  Blynk.begin(BLYNK_AUTH_TOKEN, ssid, pass);
}
```

```
void loop()
{
  Blynk.run();
  float t= dht.readTemperature();
  float h= dht.readHumidity();
  Serial.println(t);
  Serial.println(h);
  int x=analogRead(34);
  float voltage=x*3.3/4095;
  Blynk.virtualWrite(V1,t);
  Blynk.virtualWrite(V2,h);
  Blynk.virtualWrite(V3,voltage);
  int x = digitalRead(12);
  Serial.println(x);
}
```







**This is how students have been implemented the cloud facilities of Blynk IoT using the tools that have been given**

Two mini projects have been included as a part of training projects in the Value added Course

- **Blynk Virtual Bulb**
- **Smart Umbrella**