



MALLA REDDY COLLEGE OF ENGINEERING

(Approved by AICTE-New Delhi, Affiliated to JNTUH-Hyderabad)

Recognized under Section 2(f) & 12(B) of the UGC Act 1956,

An ISO 9001:2015 Certified Institution.

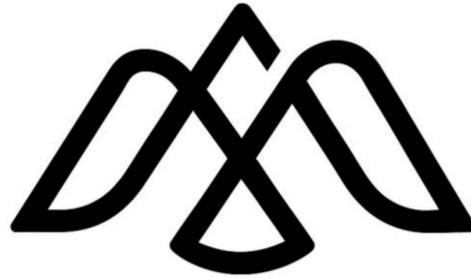
Maisammaguda, Dhullapally, post via Kompally, Secunderabad - 500100

A Report of “VIRTUAL LAB”

Organized by

Department of CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)

In Association with Plexus Club



Date : 23 -01 -2026

Venue : Block 2 , MRCE



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ABOUT THE INSTITUTION



MALLA REDDY BLOCK-A

Malla Reddy College of Engineering (Formerly CM Engineering College) has been established under the aegis of the Malla Reddy Group of institutions in the year 2005, a majestic empire, founded by chairman Sri. Ch. Malla Reddy. He has been in the field of education for the last 22 years with the intention of spearheading quality education among children from the school level itself.

Since the beginning Mr. Malla Reddy has endeavoured to ensure quality education and carved a niche for himself by managing this group of institutions.

Malla Reddy College of Engineering has been laid upon a very strong foundation and has ever since been excelling in every aspect. The bricks of this able institute are certainly the adept management, the experienced faculty, the selfless non-teaching staff and of course the students.



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INSTITUTION VISION:

To emerge as a centre of Excellence for producing professionals who shall be the leaders in technology innovation, entrepreneurship, management and in turn contribute for advancement of society and human kind.

INSTITUTION MISSION:

- To provide an environment of learning in emerging technologies.
- To nurture a state of art teaching learning process and R&D culture.
- To foster networking with Alumni, Industry, Institutes of repute and other stakeholders for effective interaction.
- To practice and promote high standards of ethical values through societal commitment.

VISION OF THE DEPARTMENT

- To teach excellence education for undergraduates in the field of Artificial Intelligence and Machine Learning in the technological-embedded domain and make professionals who help the better cause of society.

MISSION OF THE DEPARTMENT

- Impart demanding training to create knowledge through the state-of-the-art ideas and skills in Artificial Intelligence and Machine Learning.
- Facilitate the students to adapt to the rapidly changing technologies by providing cutting-edge laboratories and facilities.
- Kick off the research and training, paying special attention to the essential skills of the subsequent generation's workforce.



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ABOUT CSE (AI&ML) DEPARTMENT



CSE-ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

ABOUT THE DEPARTMENT

The Department of Artificial Intelligence and Machine Learning (AI&ML) was founded in 2020 with the goal of providing high-quality higher education to as many students as possible and to satisfy the enormous need for highly trained professionals in the industry. The Department of AI&ML offers a B. Tech program in Computer Science and Engineering (Artificial Intelligence and Machine Learning). The curriculum is created to give students a firm foundation in AI and ML principles and concepts as well as practical experience in handling situations from the real world. Programming languages, computer architecture, machine learning, natural language processing, artificial intelligence, and deep learning are some of the department's core subjects. Students are continuously trained with an attitude of excellence to overcome automation challenges across all industries and provide new context and background to improve the agile process with the assistance of great laboratory facilities and well-qualified faculty members. Because of the program's interdisciplinary nature, it draws on knowledge and coursework from many different disciplines, including computer science, mathematics, and statistics. Students will have the chance to take part in research projects in addition to the required courses, both inside the department and with other departments and organizations. Students who complete the B.Tech. programme in Computer Science and Engineering (Artificial Intelligence and Machine Learning) will be well-versed in the theories and methods of AI & ML and will be qualified for employment in a range of fields and positions, including data analysis, software development, and research.



PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

- PO.1 **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO.2 **Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO.3 **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO.4 **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO.5 **Engineering Tool Usage.** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO.6 **The Engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO.7 **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO.8 **Individual and Collaborative Teamwork.:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO.9 **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive **clear** instructions.
- PO.10 **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO.11 **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



PROGRAM SPECIFIC OUTCOMES (PSO)

PSO1 - An ability to apply unconventional fundamental AI technologies, to citation information and deliver knowledge to intelligent decision-making systems.

PSO2 - An ability to grow an ethical and contemplative approach to the machine learning tools that can address complex reasoning tasks for the enhancement of society.

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

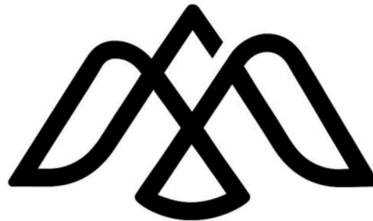
PEO1 – Graduates will obtain robust knowledge in the field of artificial intelligence and machine learning theory and principles for classifying, examining and solving problems.

PEO2 – Graduates will upgrade skill to work efficiently within a squad and apply suitable practices within a skilled and ethical framework for societal needs.

PEO3 – Graduates will pursue higher education and accomplish sustainable growth through lifelong learning and research.



ABOUT PLEXUS

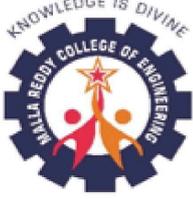


The Plexus Club envisions a dynamic, inclusive, and empowering community that nurtures the holistic development of every student. Rooted in the belief that education extends beyond the classroom, the club is committed to offering a comprehensive platform where students can explore a broad spectrum of interests — spanning technical, non-technical, creative, and athletic pursuits.

Our mission is to cultivate a vibrant environment where students are encouraged to step out of their comfort zones, unlock their potential, and actively engage in diverse opportunities. Whether it's through hands-on technical workshops, coding marathons, public speaking events, artistic showcases, sports tournaments, or leadership forums, Plexus is designed to be a space where talents are discovered, passions are pursued, and ideas come to life.

By fostering collaboration, innovation, and critical thinking, the club aims to equip students with essential skills that prepare them for both professional success and personal fulfilment. Emphasis is placed not only on academic and career-oriented growth but also on emotional intelligence, creative expression, and teamwork — qualities that define well-rounded individuals in today's interconnected world.

Ultimately, the Plexus Club aspires to be more than just an extracurricular space; it seeks to be a transformative journey. Through meaningful experiences, lasting friendships, and impactful projects, our members emerge as confident, compassionate, and competent contributors to their communities and industries.



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ABOUT THE EVENT



INTRODUCTION TO VIRTUAL LAB:

The Virtual Lab session introduces students to an innovative digital learning environment that enables practical experimentation through simulation-based laboratories. It bridges the gap between theoretical knowledge and hands-on experience by providing access to lab experiments anytime and anywhere.

ENHANCING PRACTICAL LEARNING:

A key objective of the Virtual Lab is to enhance students' understanding of complex concepts through interactive experiments. By visualizing processes and performing virtual experiments, students gain deeper insights that strengthen their conceptual clarity and analytical skills.

ACCESSIBILITY AND FLEXIBILITY:

Virtual Labs offer equal learning opportunities to all students, regardless of physical infrastructure limitations. The platform allows learners to perform experiments at their own pace, encouraging self-learning and continuous practice beyond traditional laboratory hours.

APPLICATION OF THEORY TO PRACTICE:

The session emphasizes the practical application of theoretical concepts learned in classrooms. Students will explore real-world scenarios through simulations, helping them connect academic knowledge with industry-relevant skills.

TECHNOLOGY-DRIVEN EDUCATION:

Virtual Labs represent the integration of technology in modern education. The workshop highlights how digital tools and online platforms are transforming the learning process, preparing students for technologically advanced academic and professional environments.

BUILDING SKILLS FOR THE FUTURE:

Finally, the event focuses on developing critical thinking, problem-solving, and technical skills among students. By engaging with Virtual Labs, learners are encouraged to adopt innovative learning methods that support academic excellence and lifelong learning.

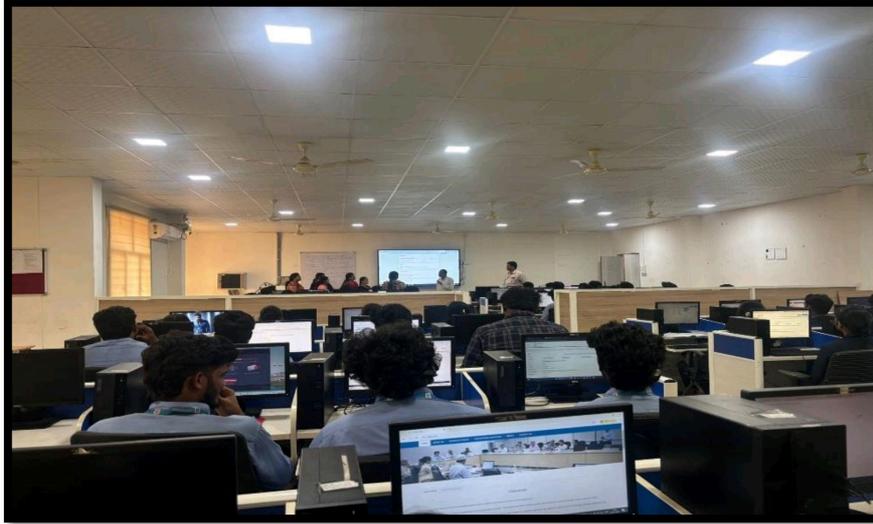




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BRIEF OVERVIEW OF THE WORKSHOP



The Department of Computer Science and Engineering (Artificial Intelligence & Machine Learning), in association with the Plexus Club, successfully organized Demonstration of “**Virtual Labs**” on **23th January 2026** at **Malla Reddy College of Engineering**. This demonstration was designed to enhance students’ practical learning experiences by introducing them to technology-driven virtual laboratory platforms that bridge the gap between theoretical concepts and hands-on experimentation.

The primary objective of this initiative was to familiarize students with the concept, significance, and applications of Virtual Labs across various domains of computer science and engineering. Emphasis was placed on enabling students to perform experiments in a simulated environment, understand complex algorithms and systems through visualization, and develop analytical and problem-solving skills relevant to modern technological practices.

Each day of the workshop featured interactive demonstrations, guided virtual experiments, and hands-on practice sessions that allowed students to explore different modules of Virtual Labs. Participants were encouraged to apply classroom knowledge to real-time simulations, enhancing their understanding of subjects such as data structures, artificial intelligence, machine learning, networking, and operating systems. Faculty members facilitated discussions that highlighted the advantages of Virtual Labs in overcoming infrastructural constraints and promoting self-paced, continuous learning.

This Demonstration also addressed the role of Virtual Labs in contemporary education, particularly in supporting remote learning, innovation, and research-oriented thinking. Students gained exposure to industry-aligned tools and digital platforms that foster experimentation, collaboration, and technical competency. Through assignments, group activities, and practical tasks, participants developed confidence in using virtual environments for academic and professional growth. By the end , students demonstrated improved conceptual clarity, enhanced technical proficiency, and a greater appreciation for technology-enabled learning methodologies. The event stood out as a valuable academic initiative that aligned with the AIML Department’s vision of nurturing technically skilled, innovative, and future-ready engineers capable of adapting to evolving educational and industrial landscapes.



Target Audience : III Year CSM- A, B, C Students



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Summary:



A REMARKABLE ACCOMPLISHMENT

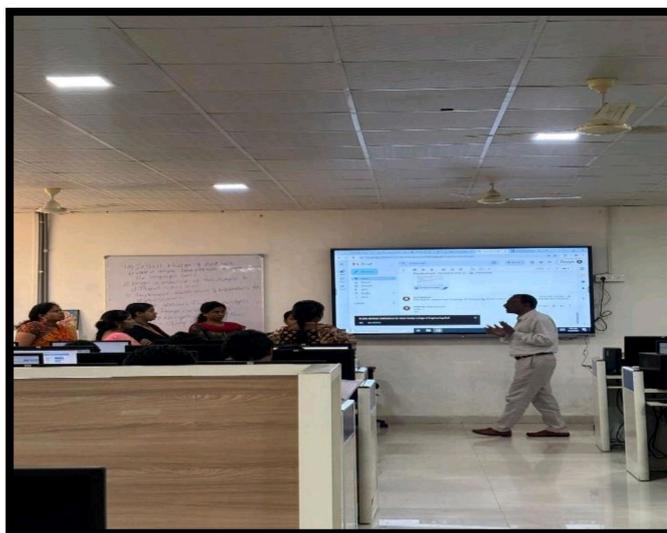
The Department of Computer Science and Engineering (Artificial Intelligence & Machine Learning), in association with the Plexus Club, successfully organized a **Demonstration on Virtual Labs** on **23rd January 2026** at **Malla Reddy College of Engineering** for the **III-year CSE (AIML)** students. The session was demonstrated by **Dr. V. Narasimha Reddy, Dean – Student Affairs**, who shared his expertise on the importance of integrating technology-driven learning tools into engineering education.

During the demonstration, **Dr. V. Narasimha Reddy** provided a comprehensive overview of Virtual Labs, explaining how they serve as an effective platform for conducting experiments in a simulated environment. He highlighted the role of Virtual Labs in bridging the gap between theoretical classroom learning and practical application, especially in advanced domains such as Artificial Intelligence, Machine Learning, Data Structures, Computer Networks, and Operating Systems. Through live demonstrations and explanations, students were introduced to the structure, functionality, and usability of various Virtual Lab modules.

The session emphasized the advantages of Virtual Labs in promoting self-paced learning, improving conceptual understanding, and overcoming limitations related to physical laboratory

infrastructure. Students were encouraged to actively engage with the virtual experiments, analyze outputs, and explore multiple scenarios, thereby strengthening their analytical, problem-solving, and technical skills. The demonstration also underscored the relevance of Virtual Labs in supporting remote learning, research activities, and innovation-driven education.

By the end of the session, students exhibited improved awareness of technology-enabled learning methodologies and gained confidence in using virtual platforms for academic and professional development. The event proved to be a valuable academic initiative that aligned with the AIML Department's vision of nurturing competent, innovative, and future-ready engineers capable of adapting to evolving educational and industry requirements.

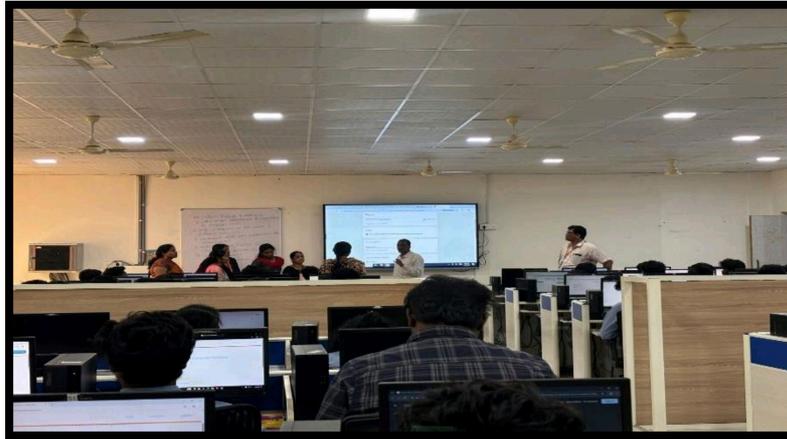




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CONCLUSION



The Demonstration on Virtual Labs organized by the Department of Computer Science and Engineering (Artificial Intelligence & Machine Learning), in association with the Plexus Club, concluded successfully with positive participation from III-year CSE (AIML) students. The session effectively highlighted the importance of Virtual Labs as a modern learning tool that enhances practical understanding through simulation-based experimentation.

The demonstration delivered by **Dr. V. Narasimha Reddy, Dean – Student Affairs**, enabled students to gain clarity on the usage and benefits of Virtual Labs in bridging the gap between theoretical knowledge and practical application. Students developed a deeper understanding of complex concepts, improved their analytical and problem-solving skills, and recognized the value of technology-enabled, self-paced learning.

Overall, the event proved to be a meaningful academic initiative that reinforced innovative teaching methodologies and aligned with the department's vision of nurturing technically competent, industry-ready, and future-focused engineers. The successful execution of the demonstration encouraged students to actively adopt Virtual Labs in their academic journey and continuous learning process.

“VIRTUAL LABS”

*Successfully organized and completed with support of Principal, Head of Department,
Year Incharge, and Class Incharge*

Signature

Principal

: 

Head of Department

: 

Year Incharge

: 

Class Incharges

: 

THANK YOU!!