# DEPARTMENT OF APPLIED SCIENCES COLUMBUS



#### **MESSAGE FROM PRINCIPAL**



It gives me great pleasure to give my best wishes to the editorial committee of the Department of Applied Sciences, New Horizon College of Engineering. The students and faculty of the department are always enthusiastic learners and great thinkers embarking and enriching their know knowledge to grow as our future entrepreneurs and be our future pillars of strength. I congratulate all the achievers, contributors and students for bringing out such a captivating newsletter. May this newsletter instill the best in you.

Regards, Dr. Manjunatha

## LETTER FROM HOD

#### DR. ANUSUYA DEVI V.S PROF. & HOD - APPLIED SCIENCES



I am delighted to share our collective achievements in this newsletter, highlighting the remarkable efforts of both our students and teachers.

To our dedicated faculty members, Your commitment to excellence in teaching and research has been the cornerstone of our success. Your passion for chemistry and tireless efforts to inspire and guide our students do not go unnoticed. Thank you for your invaluable contributions to our department.

To our outstanding students, Your achievements this year have been truly impressive. Your curiosity, hard work, and commitment to academic excellence have set a standard for others to follow. We are proud of your accomplishments and look forward to witnessing your continued success in the future.

As we celebrate these achievements, let us also acknowledge the collaborative spirit that defines our department. Together, we create an environment where excellence thrives. Thank you all for your dedication and contributions.

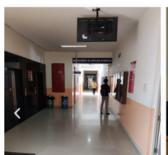
## **ABOUT THE DEPARTMENT**

Department of Applied Sciences was started in the year 2001. As a fundamental department, supporting all branches in 1st year of engineering, laying emphasis on basics of Sciences and Engineering along with Humanities.

Furthermore, it deals with applications of Basic Sciences in engineering discipline covering all the major domains of technology. Applied Sciences Department has many dedicated Professors, Associate Professors and Assistant Professors, who are actively involved in research activities. Their experiential insights of research are also reflected in classroom teaching.

Numerous research publications in leading National and International Journals have been produced to the credit of department. The department has well-equipped laboratories for Engineering Physics, Basic Electrical Engineering, Engineering Chemistry and Languages.

Labs of Mechanical Engineering and Computer Science Engineering aid in developing and nurturing the students in the 1st year. The Department stands tall in developing scientific temperament among the budding engineers along with required elements of Humanities









#### **APPLIED SCIENCES DEPARTMENT**

#### VISION

To build strong and sustainable platform for churning out quality students bearing appreciable conceptual knowledge and engineering mindsets to their respective branch department(s).

#### MISSION

To develop and nurture dedicated teaching-learning team equipped with strong personality traits towards application driven approach, encompassing all stakeholders.

#### QUALITY POLICY

To provide education services of the highest quality both curricular and co-curricular so that our students can integrate skills and serve industry and society equally well at the Global level.

#### GOAL

To set academic and allied environments amongst First year BE students for channeling their personalities towards their parent branches.

## **DEPARTMENT ACHIEVEMENTS**

- Mathematics, Chemistry and Physics R&D centers
- No. of Faculty persuaded Phd are 16
- No.Of research scholars perusing PhD are 16.
- 15 Awards
- No of research publications in last 5 years are 300
- 24 books / book chapters
- 25 Patents
- The faculty provides 25+ NPTL courses per year.
- MOOC Courses: Our department faculties have enormous and varied courses completed in all categories and we strive to bring in capabilities of relearning always.
- From 2017 -23 we have successfully completed more than 200 courses. We are proud of our department faculties for always upskilling their learnings and imbibing them to the students.
- The New Horizon College of Engineering in India hosted the <u>International Conference on</u> <u>Multidisciplinary Research in Technology and</u> <u>Management</u> which was held on September 22nd – 23rd, 2023.
- 50+ papers were submitted by the department at the MRTM conference.

#### TALK ON INDIAN KNOWLEDGE SYSTEM

#### **Department Of Applied Sciences**

Organising A talk on

#### Indian Knowledge System (IKS)

Dr. Priyameet Kaur Keer

Associate Professor - MBA

📆 04 April 2024 | 11:00 AM



Ist year B.E students







The Department of Applied Sciences had organized a talk on Indian Knowledge System by Dr. Priyameet Kaur Keer, Associate Professor – Department of Management Studies, NHCE, Bangalore, on April 4, 2024, at Falconry Seminar Hall for first year BE students of Chemistry cycle.

In her talk, she explained about the ancient Indian sciences and arts, how to preserve Indian heritage, how to apply ancient knowledge to modern problems such as climate change, and also how to help and lead a healthy, sustainable, holistic quality of life. She emphasized on the IKS being an invaluable source of inspiration and wisdom for people around the world.

## ALUMNI TALK ON "THE JOURNEY FROM ZERO TO ONE: TURNING YOUR IDEA INTO REALITY"

Department of **Applied Sciences** in collaboration with Alumni **Association had organized** an insightful Alumni Talk titled "The Journey from **Zero to One: Turning Your** Idea into Reality." 08/05/24. The distinguished speaker for the event was Mr. Vaibhav Sharma, an accomplished alumnus who is the Founder of Cope Studio and Dehidden.

Mr. Vaibhav Sharma delivered an inspiring and informative talk. insights resonated deeply audience, with the motivating them to pursue their entrepreneurial aspirations with passion, persistence, and purpose. Students engaged with Mr. Vaibhav in a meaningful way and demonstrated interest in learning about start-ups.

Alumni Association & Department of Applied Sciences

Organize

Alumni Talk on

## The Journey from Zero to One: Turning Your Idea into a Reality

#### Speaker

#### Mr. Vaibhav Sharma

Founder

@ Cope Studio and Dehidden

Batch: 2013-17







#### **GUEST TALK ON QUANTUM COMPUTING**







**Department of Applied** Sciences had organized a Guest Lecture on "Quantum Computing" on o6th May 2024. The speaker was Dr Dr. Jayakumar Vaithiyashankar, Quantum **IBM** Educator, Certified Associate Developer **Quantum Computation using Qiskit, Prsedincy** Assistant Professor, Bangalore. University, Quantum computing is a rapidly advancing field that explores the use of quantum mechanics to perform computation.

**Quantum computing harnesses** principles the of quantum mechanics to process information in ways that traditional computers can't. The speaker outlined the underlying principles of Quantum and demonstrated the physics simulation of Quantum gates using Qiskit tool. The various quantum gates were discussed in the perspective of Quantum circuits. He also emphasized on the power of Quantum computing to revolutionize various industries. including cryptography, optimization, drug discovery, and artificial intelligence.

## GUEST TALK ON HOW TO WIN THE PRODUCT GAME

On 23rd May 2024, the Department of Applied Sciences - Mathematics organized a guest talk at Falconry Seminar Hall, NHCE. The guest speaker was Mr. Bhaskar Pai, Founder and CEO of Fun2do SSP.

The lecture focused on the theme of "Innovations and Startups using the basic knowledge of Mathematics." The audience comprised students from the second semester of BE along with faculty members, totaling around 160 attendees.

Mr. Bhaskar Pai addressed the students, sharing insights and perspectives on how mathematical principles can be applied to foster innovation and drive startup ventures.

It was a significant event aimed at enriching the understanding of students regarding the practical applications of mathematics in the realm of innovation and entrepreneurship.







## GUEST TALK ON NANO CRYSTALLINE NICKEL ALLOYS AND COMPOSITE COATINGS

On 14th June 2024, the Department of Applied Sciences organized a guest lecture featuring Dr. J N Balaraju, Chief Scientist & Deputy Head at the National Aerospace Laboratories in Bangalore.

Dr. Balaraju is renowned for his extensive research in surface coatings, ecofriendly coatings, and alloys for aerospace engineering, boasting a publication record of over 70 papers in esteemed international journals.

The lecture, attended by approximately 200 students and faculty members, focused on the significance of alloys and composites in electroplating and electroless plating within aerospace applications.

Dr. Balaraju elucidated on the advantages of electroless plating compared to traditional



Dr. Balaraju elucidated on the advantages of electroless plating compared to traditional electroplating methods, offering insights that resonated well with second-semester students who had recently studied related topics in their Chemistry syllabus.

The session was marked by lively interactions between Dr. Balaraju and the students, fostering a deeper understanding of advanced materials and their practical applications in real-world engineering scenarios. The event not only broadened students' perspectives but highlighted the critical role of scientific research in driving technological advancements in aerospace and related industries.



#### THE STEM CLUB

#### **VISION OF THE CLUB**

To cultivate a dynamic space for aspiring engineers and scientists to innovate, collaborate, and be creative.

#### **OBJECTIVES OF THE CLUB**

Skill development – To promote the development of soft skills like teamwork, problem-solving, and critical thinking alongside technical skills.

- Hosting innovative challenges encouraging students to develop solutions to real-world problems and showcase their skills.
- To be a Launchpad for students propelling students into the endless field of STEM.

#### **FUNCTIONS OF THE CLUB**

- Creating an interactive and inclusive platform that allows students to showcase their technical skills, creativity, and entrepreneurial mindset.
- Organizing interactive lectures, seminars, and panel discussions with the faculty of NHCE and guests.
- Organizing exhibitions, workshops, and talent hunts allowing students to discover and explore their skills.
- Commemorating and celebrating days that are of high importance in the field of STEM

#### **OUTCOMES OF THE CLUB**

- -Increased interest in STEM Encouraging members to develop a greater interest in STEM and fostering a passion for scientific inquiry.
- -To promote collaboration Fostering collaboration and teamwork among students allowing them to exchange their knowledge and ideas.

## WIPO-WORLD INTELLECTUAL PROPERTY DAY

3rd April, on World Intellectual **Property** the Dav. club **STEM** in association with the IIC organized WIPO. exhibition art an with the theme 'Protection intellectual property rights'.

Students enthusiastically showcased their artwork, demonstrating their creativity, whilst conveying the message of safeguarding intellectual property rights.

WIPO drew the attention of students and teachers alike as they actively engaged with the participants asking questions and better understanding the event's theme.

Dr. Sujin Jose was the judge for the event.





Samarth H.G Hegde, Praneeth, and Balaram G secured the first place in the WIPO art exhibition for their exceptional artworks on intellectual property rights.

The second place in the competition was won by Sumanth, Mithun, and Muralikrishna, whose artworks also impressed the judges with their creativity.

## CAMPUS TO COMMUNITY

On the 22nd of April, a collaboration heartfelt **NHCE's** unfolded between first-year representatives, STEM club members, and the children of 'Makkala Dhama' orphanage. The initiative aimed to extend support and care to the young residents by essential donating daily items, ensuring their basic needs were with met kindness and generosity.

The day was not only about material donations but also about fostering connections and creating joyful memories. The children of the orphanage participated enthusiastically in games and showcased their talents through performances, bringing smiles and laughter to everyone present.

addition In to the recreational activities. students from NHCE took on role of educators. the imparting crucial lessons on health and hygiene to the children. These sessions were interactive and informative. designed to empower the children with knowledge that promotes their well-being.





As gesture of gratitude and Makkala camaraderie, Dhama generously hosted a delicious lunch for all participants, further strengthening bonds between the the campus community and the orphanage. The day's events exemplified the spirit of empathy, community service, and emphasizing mutual support, the importance of compassion and outreach beyond the confines of the campus.

## **CAMPUS TO COMMUNITY**

On 6th May, a group comprising first-year students, members of the club. STEM and faculty members visited Nisarga Grama. The visit was marked meaningful by several activities aimed at supporting and engaging with the community:

All first-year students participated in collecting and donating daily essentials to the orphanage, reflecting their collective effort to contribute to the welfare of the children.

The students organized a vibrant afternoon filled with fun activities for the children. Games such as passing the parcel and the switch word game were enthusiastically enjoyed, creating a joyful atmosphere for all.

As part of their educational outreach, students conducted sessions on basic hygiene, imparting valuable knowledge and promoting health practices among the children.

The day concluded on a warm note with a delicious lunch provided by Nisarga







Grama, fostering a sense of community and appreciation for the hospitality extended by the orphanage.

This visit not only provided practical support to Nisarga Grama but also offered a platform for meaningful interaction and learning between NHCE students and the children at the orphanage. It exemplified the spirit of compassion, community service, and mutual learning, leaving a positive impact on all participants involved.

## **NEWTON'S NEMESIS**







On June 14th, the STEM Club aided by the Sports Department organized "Newton's Nemesis", a game of tug of war between multiple classes and finally the main battle of physics vs chemistry cycle.

Tug of war is a competitive team game where two groups pull opposite ends of a rope, aiming to drag the other team across a central line. It offers both fun and exercise.

• There were 17 matches conducted for the boys with constant elimination where the ultimate battle was won by G section (Chemistry cycle).

For the girls, there were a total of 6 matches conducted where the Physics cycle won.

The winners received the legacy rolling trophy by the HOD of Applied Sciences and other Senior faculty.

This activity was aimed to boost physical strength, team building, fostering cooperation and stress relief.

The STEM Club hosted EXODUS'24 from June 24 to June 26. EXODUS was a one-of-a-kind event that seamlessly integrated science and fun.

As a promotional event on June 14th, the STEM Club, with the help of the Sports Department, arranged "Newton's Nemesis," a tug-of-war game between numerous courses that culminated in a final battle between the physics and chemistry cycles. The victors were awarded the legacy rolling trophy by the Head of the Department of Applied Sciences and other senior faculty members.

On the first day of EXODUS'24, we presented two events: "Cipher," a science-themed hangman game, and "Face Off" a celestial-themed face painting competition. The second day included "Idea Blitz," where teams produced inventive solutions to realworld challenges, and "Code Guru", demonstrated which participants' coding and debugging abilities. The third day ended with "Interstellar Innovation," examined competition that the stability of the bridges made by the contestants.

Each event received positive feedback, and the overall execution was flawless, adding to the success of EXODUS'24.





#### **CIPHER**



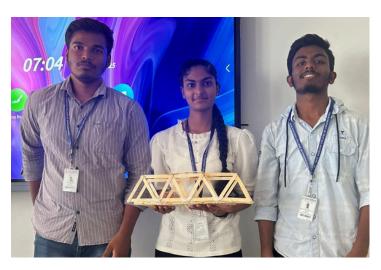


On April 24th, the **STEM** Club organized Cipher as part of Exodus 2024 at NHCE. The event featured two rounds: Hangman, where participants guessed letters to uncover words. Morse code deciphering, challenging their cryptography skills. **Participants** showed enthusiasm skill and throughout, demonstrating adeptness

demonstrating adeptness in both wordplay and decoding challenges.

Winners included Ashlin and Laavanya in first place, and Samarth H G Hegde, Veda Ramnath, Rishit Butola, and Ayush Maurya in second place. Cipher not only entertained but also the club's highlighted commitment to promoting cryptography fostering critical and thinking in **STEM** education.

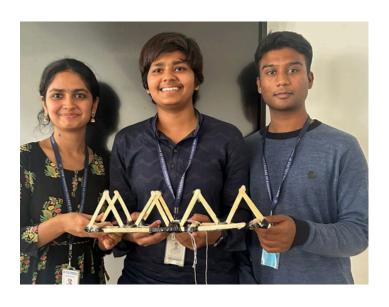
#### INTERSTELLAR INNOVATION



On June 26th, as part of Exodus 24, the STEM Club at NHCE organized "Interstellar Innovation," a stability test event where students were challenged to design innovative structures capable of bearing heavy weights. The criteria for judging included the design, exactness, and stability of the structures.

Students eagerly participated, showcasing their creative thinking and engineering skills as they presented their designs aimed at ensuring structural stability under load. The event provided a platform for students to

demonstrate their innovative prowess within a competitive setting highlighted their ability to tackle practical challenges within specified constraints. Dr. Jisha, serving as the judge for the event, brought expertise and insight to evaluate the designs based on their technical merit and effectiveness in meeting the criteria. Her specified involvement added credibility and guidance to the participants, ensuring a fair assessment recognition of their efforts.



#### **IDEA BLITZ**

On June 25th, NHCE's STEM Club hosted Ideablitz, an Ideathon tackling urban challenges: overloaded garbage bins, traffic congestion, and city conservation. water **Teams** students passionately presented their innovative solutions, emphasizing practicality and creativity. Dr. Agalya iudged based originality, on feasibility, and impact, ensuring a fair assessment.

Ideablitz sparked enthusiasm among participants, showcasing their problem-solving skills and interdisciplinary collaboration. The event highlighted NHCE's dedication to fostering innovation in STEM education and addressing real-world issues. Winners, including Ramaa G, V Bhumika, G Slekha (first place) and Abhishek (second place), exemplified exemplary ideas and presentation skills.

Overall, Ideablitz not only encouraged student creativity but also reinforced the importance of practical solutions for sustainable urban development. It provided a valuable platform for students to explore entrepreneurial opportunities and contribute positively to societal challenges.





#### **FACE OFF**







On 24th June, the STEM Club organized Face Off, a space-themed face painting competition, as a part of EXODUS'24.

The event showcased the creative talents of participants who were tasked with designing space-themed face paintings. The event aimed to celebrate the beauty and mystery of outer space through artistic expression.

The event was a resounding success, celebrating the intersection of art and space exploration. It provided a platform for artists to showcase their skills and imagination.

- First Place: Vidhya K Rao, Praveen Patil -S Section
- Second Place: Akshaya, Sanjana –
   BSection
- Third Place: Ananya Shiva D, K Vinay Kumar – H Section

The first-place winner received a trophy, the second-place winner was awarded a certificate, and the third-place winner received a special mention.

Jimpi Salhotra Ma'am from Life Skills Dept. was the judge for the event.

#### **CODE GURU**

On June 24th, the STEM Club meticulously orchestrated "Code Guru", a captivating quiz event with a sophisticated coding game-show theme.

Spanning across two different classrooms, members and volunteers of the STEM club hosted code guru in their assigned classrooms.

Code Guru is a clublevel coding
competition where
students showcase
their programming
skills and
problem-solving
abilities

Winners are recognized for their technical prowess and ability to devise efficient solutions to complex problems.

The winners were Akash Kumar Gupta, Suhan, Manasa.



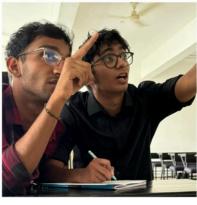
#### Code Guru

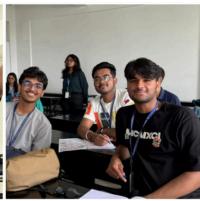
**Event Description:** 

Come join us in the world of puzzles, codes, and mystery. An event that tests your coding and debugging skills.

#### **Rules & Regulations:**

- · No phones will be allowed during the event
- Any malpractice would lead to disqualification
- · The Judges decision is the final
- Individual Event
- Coding will be in C and Python.





#### **FACULTY ACHIEVEMENTS**

#### Dr. Srinivasa ·



Dr. Srinivasa's mentorship extends to five dedicated research scholars, who benefit from his vast knowledge and guidance. Over his remarkable 26-year teaching career, he has consistently demonstrated his commitment to education and research, having published numerous impactful research papers. His achievements and dedication set a high standard for excellence and serve as an inspiration to all.

As a distinguished academic and a beacon of excellence in his field, Dr. Srinivasa's recent Best Paper Award at the MRTM Conference is a testament to his outstanding contributions to research and scholarship. With an impressive portfolio of authored books and pages, as well as numerous patents to his name, Dr. Srinivasa's work continues to inspire and innovate.

#### Dr. Suma T.



Dr. Suma T. is a distinguished mathematics faculty member who completed her Ph.D. in 2019 and has since made significant contributions to her field. With eight published papers, she has demonstrated a strong commitment to advancing mathematical research and sharing her profound insights with the academic community. Dr. Suma's dedication to her work is truly commendable, reflecting her deep expertise and passion for mathematics. Her research not only pushes the boundaries of mathematical knowledge but also serves as a valuable resource for her peers and students. Dr. Suma's unwavering commitment to education and research continues to inspire and influence those around her, setting a high standard for excellence in the academic community.

#### **FACULTY ACHIEVEMENTS**

#### Dr. Vijilius







Dr. Vijilius is an esteemed academic with a distinguished career spanning over 30 years in teaching. She completed her Ph.D. in 2014 and has since made significant contributions to her field. With 24 published papers and 10 impactful research papers, Dr. Vijilius has demonstrated a profound commitment to advancing research and sharing her expertise with the academic community. Her innovative work is further evidenced by the patent she holds.

Dr. Vijilius has also presented numerous papers at various prestigious conferences, showcasing her dedication to disseminating knowledge and fostering academic dialogue. Her long and exemplary service has been recognized with the prestigious Long Service Award for 18 years of dedication and excellence. Dr. Vijilius's extensive experience, profound insights, and unwavering commitment to education and research continue to inspire and influence her peers and students alike.

#### STUDENT ACHIEVEMENTS









In the realm of dance, Abhira Mishra's journey began with an early passion ignited by the rhythmic beats of music. From her tender age, she displayed unwavering dedication, leading to her first dance prize at just four years old. At eleven, Abhira embarked on a transformative Bharatnatyam journey under the guidance of Guru Smt. Rama Prasad at the esteemed Sutapradalaya Dance School. Her commitment flourished, culminating in her completion of the Senior Certificate Program in Bharatanatyam from Annamalai University. This achievement paved her path to stages adorned with prestigious events like The Parathasarthy Swami Sabha in Mylapore, Chennai, and Natyanjali Series on Shankara Television. Abhira's artistry transcended borders, gracing international dance festivals at Cambodia's Angkor Wat Temple in 2019 and in Sri Lanka in 2023, where she earned accolades like "BHARATHA KALAIMANI" and "BHARATHA YUVA KALAA RATNA." Beyond Bharatanatyam, Abhira's repertoire spans Hip Hop, Contemporary, Wacking, and Freestyle, honed through performances with 'The Shiamak Davar Dance Company.' Her philosophy views dance as the language of the soul, uniting cultures and stirring hearts through every graceful movement. The foundation of her journey, Sutapradalaya Dance School, was crafted by the visionary Smt. Rama Prasad in 2007. With over 25 years of experience, Rama Prasad's dedication to preserving traditional dance forms shines through her mentorship. Her curriculum blends theory with practical training, enabling students to excel both in dance and academics. Through the guiding light of her Guru, Abhira Mishra continues to weave her passion into a symphony of movement and music, a testament to her unwavering dedication and boundless love for dance.

~ Abhira Mishra
Computer science & engineering
Section 'B'

#### STUDENT ACHIEVEMENTS





guidance of my parents, both passionate music aficionados. They instilled in me a deep-rooted love for music, a connection that began even before I was born, as my mother sang to me in her womb. Formal training under Siva Krishna sir honed my musical abilities, while in 2013, I embraced art under the mentorship of Prathap sir, nurturing my creativity profoundly. Music and art have become inseparable parts of my life, offering solace and expression. Despite challenges like the COVID-19 pandemic disrupting my classes, I persevered, continuing music online and independently practicing art, which bolstered my resilience and confidence. Along this journey, I've achieved significant milestones: winning national awards in painting, earning gold medals, and gaining recognition in music, including accolades like the "Ultimate Fan of Shreya Ghoshal." Beyond these passions, I find joy in chess, badminton, guitar, languages, writing, and reading, enriching my life with diverse interests and pursuits.

~ Allu Uma Eashanvi Electronics & Communication Engineering section 'H'

#### STUDENT ACHIEVEMENTS



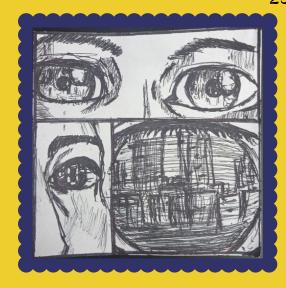


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From a young age, my fascination with art has been a defining part of my life. It all began with simple sketches, but by the age of ten, I delved deeper into the creative world that captivated me with its intricate details and expressive power. Creating mandalas, painting, and sketching portraits aren't just hobbies—they're therapeutic journeys. Mandalas, with their repetitive patterns, offer a calming, meditative escape. Painting allows me to explore emotions through color, while portrait sketches challenge me to capture personalities with pencil strokes. Inspired by nature and motivated by the portraits of artists before me, each artwork I create reflects my thoughts and emotions. Despite challenges like fear of imperfection and time constraints, my passion for art fuels my journey of continuous growth and exploration in this profound form of self-expression.

~ Tejashwini C AIML section 'K'

M.Sandesh 23CS232





Dushyani Shree Manjunath \_\_\_\_\_ 23AI178





RAMYA PATHAK 23CS124





Sai Kalyan 23CS071





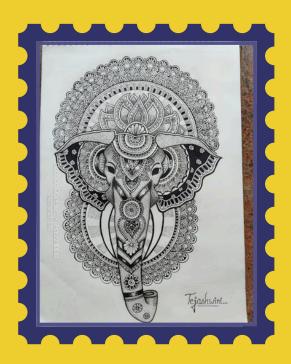
PASALA SAINITHIN 23EC006





Tejashwini c 23AI179





Shenaaya Abraham 23A1013



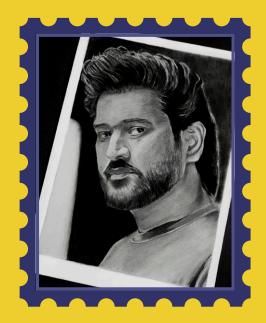






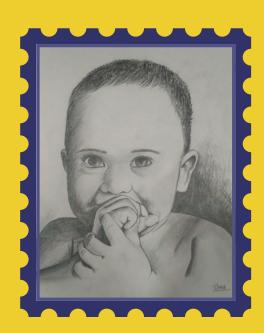
Divija Akunuri \_\_\_\_ 2318050





Allu Uma Eashanvi \_\_\_\_\_ 23EC049





## THE EDITORIAL TEAM



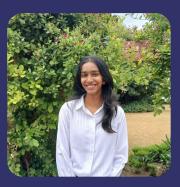
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Dr.Prashanth KK Asst.Prof. Mathematics



Mrinmayee Choudhury B.E 1st year



S. Shivani B.E 1st year



Nithya Yadhunatha B.E 1st year

