

अविन्या वृद्धि

Insight to innovative growth

Official Newsletter
Department of Mechanical Engineering

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Editor-in-chief:
Dr. Vaibhav Jain
Editor:
Ms. Surabhi Lata

Student Editors:
Vasu Kumar
Prisha Sagar
Anshul Kumar
Sharmishta Menon

Maharaja Agrasen Institute of Technology



VISION

To be a global leader in Mechanical Engineering education, research & innovation with ethics and values.

MISSION

M1: To deliver industry relevant and skill oriented education in Mechanical Engineering, encompassing Production, Design, Thermal, and Emerging Areas to address diverse global challenges.

M2: To foster ethical values with professional skills for the benefit of industry and society.

M3: To enhance the teaching-learning process through modern pedagogical tools.

M4: To promote research, innovation and entrepreneurship using sustainable technologies and continuous learning.

M5: To strengthen engagement with alumni, industry and other stakeholders for collaborative growth and capacity building.

PROGRAM EDUCATIONAL OBJECTIVES

The objectives of the Department of Mechanical Engineering are to produce graduates who will have:

PEO1: Employability, entrepreneurship, leadership skills, and the ability to pursue higher education for the enhancement of knowledge.

PEO2: Ability to lead through research and innovation in the field of Mechanical Engineering.

PEO3: Engineering competence with good communication skills, professionalism, moral values

as well as foundation for lifelong learning.

PEO4: Technical capabilities pertinent to Mechanical and Allied Engineering and to provide innovative and sustainable solutions for industrial and societal problems.

WORD FROM THE HEAD

Dear Avinya-Vrddhim Readers,

Greetings to the esteemed members of our Mechanical Engineering community! It is with great pleasure and enthusiasm that I address you through the pages of our biannual newsletter, providing a snapshot of the latest developments and accomplishments within our department.

In the fast-paced world of mechanical engineering, staying informed is key to staying ahead. This newsletter serves as a bridge between our department and its stakeholders, offering insights into the noteworthy activities, achievements, and innovations that have unfolded over the past months.

As we navigate the ever-evolving landscape of mechanical engineering, it is heartening to witness the dedication and passion displayed by our faculty, researchers, students, and support staff. Together, we have achieved significant milestones and made strides in research, education, and industry collaboration.

This edition showcases a diverse range of articles, spotlights on research projects, and highlights of our students' accomplishments. From groundbreaking research initiatives to collaborative endeavours with industry partners, the content reflects the depth and breadth of our department's contributions to the field.

I extend my heartfelt appreciation to the contributors, editorial team, and everyone involved in the creation of this newsletter. Your commitment to excellence has made this publication a valuable resource for our community, fostering a sense of unity and shared purpose.

As we look to the future, let us continue to embrace innovation, collaboration, and a commitment to excellence. I encourage each member of our community to actively participate, contribute, and engage in the ongoing dialogue that shapes the trajectory of our department.

Thank you for your continued support, and I eagerly anticipate witnessing the continued success and growth of our Mechanical Engineering Department.

Warm regards,

Dr. Vaibhav Jain,
Head of Department



List of Faculty

1. Dr. Vaibhav Jain
2. Prof. V.N. Mathur
3. Dr. Anil K. Dahiya
4. Mr. Anil Gupta
5. Dr. Kanchan Mudgil
6. Dr. Sidharth
7. Dr. Vipin Kr. Sharma
8. Dr. Naveen Solanki
9. Mr. Deshdeep Gambhir
10. Ms. Surabhi Lata
11. Dr. Sumit Joshi
12. Dr. Piu Jain
13. Mr. Rakesh C. Saini
14. Dr. Sachin Gupta
15. Ms. Surbhi Upadhyay
16. Dr. Ramakant Rana

Faculty pursuing PhD
Ms. Surabhi Lata

Department Intake:
60

About the Societies

SAE India Collegiate Club of MAIT: Team JATAYU

Founded in 2012 under the SAEINDIA Collegiate Club of MAIT, Team Jatayu is a dynamic group of engineering students with a shared vision of redefining automotive engineering. Specializing in the design and development of All-Terrain Vehicles (ATVs), the team has consistently demonstrated a commitment to excellence, innovation, and technical mastery. Over the years, Team Jatayu has participated in numerous prestigious national and international competitions, including Baja SAE India, Baja SAE USA, and Enduro Student India. Their achievements not only highlight their engineering expertise but also reflect their resilience and ability to adapt to challenges. At its core, Team Jatayu thrives on collaboration and meticulous attention to detail. From conceptualizing advanced vehicle designs to executing complex manufacturing processes, the team has showcased an unparalleled ability to integrate academic knowledge with real-world applications. Their vehicles are known for their robust performance, innovative designs, and adherence to industry standards, making them a formidable competitor on any stage. Beyond competitions, Team Jatayu actively fosters a culture of learning and growth, mentoring juniors and contributing to the legacy of automotive excellence at MAIT. With a focus on pushing the boundaries of off-road vehicle engineering, Team Jatayu embodies the spirit of innovation and teamwork, paving the way for future generations of engineers to make their mark in the automotive industry.

Mr. R.C. Saini

AEROSTARS: An UAV Research and Development Society

Team Aerostars is a group of like-minded aviation enthusiasts (aerophiles) advancing aerial technology and specializing in unmanned aerial vehicles (UAVs) through collaborative innovation and rigorous research. Founded in 2021 under the Mechanical Department of MAIT, Team Aerostars serves as a platform for professionals, researchers, and enthusiasts to share knowledge, exchange ideas, and foster partnerships that drive the evolution of UAV applications across various industries. Since then we have relentlessly pursued innovation and excellence, transforming our enthusiasm into expertise. Our successes in competitions such as SAE India ADDC, TechnoXian, BML Munjal etc are a testament to our expertise and dedication. We stand as a beacon for students, empowering them to transition from technology consumers to creators. With a focus on integrating engineering, technology, and sports, Aerostars nurtures the innovators of tomorrow. As we continue to expand and reach new heights, our motto, "In Thrust, We Trust," drives us forward.

Dr. Kanchan Mudgil

Revisiting the Roots: Class of 2013



A heartwarming reunion occurred as the graduated students of 2013 from Department of Mechanical Engineering, Maharaja Agrasen Institute of Technology returned to their alma mater. With nostalgia in their hearts and smiles on their faces, they strolled down memory lane, sharing precious memories of their college journey.

These alumni, who have since ventured into diverse career paths, stood on the same grounds where they once dreamed big. Their heartfelt words resonated with gratitude, acknowledging the role their college played in shaping their lives.

Interaction with Mega Group, Japan

Delegates from Mega Group, Japan, visited MAIT on 23 August 2023 to explore potential avenues for enhancing the prospects of MAIT students in Japan and Malaysia. The discussions focused on expanding career opportunities, academic collaborations, and skill development initiatives to strengthen global exposure for students.



Team Aerostar at National Autonomous Drone Development Competition



Team Aerostar from the Department of Mechanical Engineering at MAIT achieved remarkable success at the *Autonomous Drone Development Competition* held at KCG College of Technology, Chennai, from 25-26 August 2023. The team secured an impressive *2nd position* in the *Technical Presentation* category and was also recognized as the *Best in Innovation* for their groundbreaking work in drone technology.

Their achievement was officially announced on 28 August 2023, marking a proud moment for MAIT and highlighting the students' technical expertise and innovative prowess.

Industrial Visit to Jindal SAW Lmt.

An industrial visit to Jindal SAW Limited, Kosi Kalan was organized on 23rd September, 2023 for students of Mechanical Engineering Department. 50 students accompanied with 4 faculty members attended the same. They showed the fabrication of pipes through GMAW and submerged arc welding processes and cold forming process. They explained in detail the various intermediate processes and the testing techniques used in checking of fabricated pipes. This industrial visit was an educational trip where students learned new techniques and had practical learning about the theoretical concepts.



Bharat Drone Shakti 2023: Drone Federation of India

Bharat Drone Shakti 2023 organized by Drone Federation of India hosted at **Hindan Air Force Station** on 25th - 26th September 2023, where the defense minister inaugurated C-295 Ambassadors and delegates of different countries were present, who witnessed the made in India drones and their application in different fields.

The students of Team Aerostar from Department of Mechanical Engineering, MAIT assisted the "Drone Federation of India in managing the event and made it successful. MAIT students, *Mr. Deepanshu and Mr. Sanyam* also managed the Air traffic control at Hindan Air Force Station. The team also flew the drones with the company.



*Innovation is not born from
the dream; innovation is
born from the struggle.*

Alumni Talk with Mr. Gaurav Sharma from ISRO

Department of Mechanical Engineering proudly congratulates **Mr. Gaurav Sharma, an alumni of MAIT (MAE: 2003-07 batch)** for his outstanding contribution to Nation. **Mr. Gaurav Sharma (Scientist F)** is working at ISRO and has played a very crucial role in CHANDRAYAAN 3 Project. He joined ISRO in 2007 and is commissioned at Trivandrum in LPSC/ISRO. He is leading a design team in the department and has also worked in development of ISRO's GSLV and LVM3 Rockets. He has also received **ISRO's Young Scientist Award** in the year 2017 for his significant contribution in India's prestigious space programme.



Amrit Kaal Vimarsh Viksit Bharat @2047

Maharaja Agrasen Institute of Technology, Delhi organized '**Amrit Kaal Vimarsh**' to discuss transformational changes that have laid the foundation of Viksit Bharat @2047. **Prof. Prem Vrat (Chairman, Board of Governors, IIT Dhanbad, Former Director, IITR)** was the keynote speaker of the event as nominated by AICTE.

The event was attended by 700 participants (approx.) including faculty, staff, students, and other dignities of MAIT. The topic of discussion was "**Some Thoughts on Nurturing Minds and Mind-set**".



Alumni Interaction by Mr. Navneet Bansal

An **Alumni Interaction Session** was successfully organized on **11th May 2023** at MAIT, featuring **Mr. Navneet Bansal**, an esteemed alumnus from the **2014 graduating batch**, who engaged with students and shared valuable insights on securing placements in **core companies**.

Mr. Bansal provided comprehensive guidance on enhancing technical expertise, developing problem-solving abilities, and preparing effectively for interviews. He also discussed industry trends, expectations, and strategies to excel in the competitive corporate environment. His vast experience and practical knowledge offered students a deeper understanding of career growth and success in the **core engineering sector**.

The interactive and insightful session proved highly beneficial, empowering students with the skills, confidence, and industry knowledge required to excel in their placement journeys.



Faculty Development Program on Teaching ML

Maharaja Agrasen Institute of Technology (MAIT) organized a **Faculty Development Program (FDP)** on "*Teaching Machine Learning: The Missing Links*" on 6th November 2023 at the Maharaja Agrasen Auditorium.

The session was led by **Dr. J. V. Desai**, a distinguished alumnus of **IIT Bombay**, who provided valuable insights on improving the teaching of machine learning concepts. The program aimed to enhance faculty expertise in this rapidly evolving field.



Senior Junior Interaction

A **Senior-Junior Interaction Session** was held on **27th April 2023** to discuss the **challenges and roadmap for IT companies**. The session allowed juniors to engage with seniors, gain insights, and seek guidance on navigating the IT industry. Seniors shared their experiences, discussed industry demands, and provided practical advice on skill development, interview preparation, and career growth. The session effectively bridged the gap between theoretical knowledge and industry expectations, helping students better understand career opportunities in the IT domain.

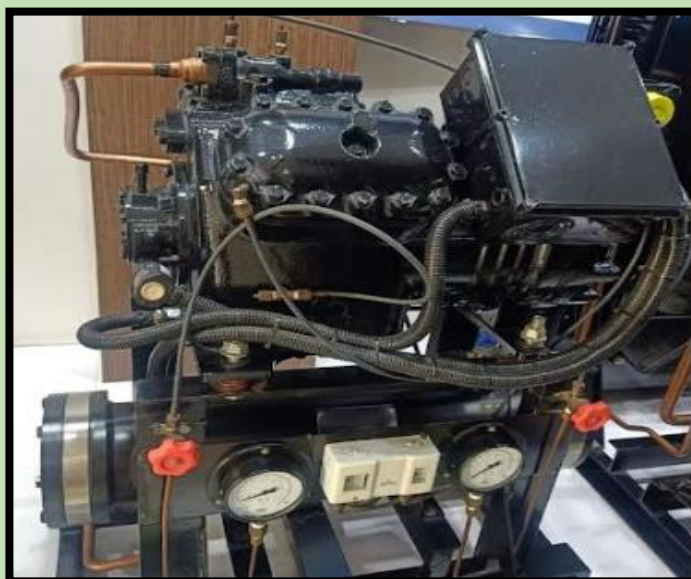


Industrial Visit to Emerson-Copeland Cold Chain Limited

Department of Mechanical Engineering, in association with the ASHRAE India Chapter, organized an industrial visit to Emerson-Copeland Cold Chain Limited, Gurgaon, on 24th November 2023.

Emerson-Copeland is a leading company in compressor manufacturing and specializes in HVAC&R (Heating, Ventilation, Air Conditioning, and Refrigeration) solutions. During the visit, students gained firsthand knowledge of advanced manufacturing processes, industry practices, and the latest technological advancements in the HVAC&R sector.

The visit provided valuable exposure to real-world applications and deepened the students' understanding of the industry, enhancing their technical knowledge



Faculty Visit to Fujiyama Power Systems

Dr. Vaibhav Jain, Prof. V. N. Mathur, Prof M. L. Sharma, Dr. K. C. Tripathi, and Ms. Nidhi Sengar from Maharaja Agrasen Institute of Technology undertook a visit to Fujiyama Power Systems Private Limited on November 17, 2023.

The objective was to gain firsthand insights into the automated plant for solar panels, solar inverter production, and lithium battery manufacturing processes. The visit aimed at fostering collaboration between the academic and industrial sectors, bridging the gap between industry and academia.



SIM-LEAGUE UAV WORKSHOP

The Sim League event organized by the Department of Mechanical Engineering in collaboration with Team Aerostar-an UAV Research and Development Society-took place on November 30, 2023.

The one-day workshop centered on Drone technology and flight simulation, attracting the participation of 27 students. A highlight of the event was a simulation drone competition, with prizes awarded to the winner, adding an element of competition and practical application to the learning experience

Throughout the workshop, students were educated on the integral components of drones, spanning multirotor and fixed-wing types, including motors, propellers, GPS, flight controllers, ESC, PDB, and telemetry. The curriculum also delved into diverse applications of drones, ranging from surveillance to agriculture. Engaging discussions on the future of drones provided participants with a holistic perspective on the evolving landscape of unmanned aerial vehicles.

“Creativity is seeing what everyone else has seen, and thinking what no one else has thought.”



Action for Restoring Environment (ARE) Round Table Meeting

Mr. Rakesh Saini, Assistant Professor, **Department of Mechanical Engineering**, and **Prof. Sunil Mathur**, Head of the **Electronics and Communication Engineering Department**, represented MAIT at the prestigious **Action for Restoring Environment (ARE) Round Table Meeting** held on **24th November 2023** at the **AICTE Headquarters**. Participation in this high-level meeting was **by invitation only**, highlighting the significance of MAIT's involvement in contributing towards sustainable environmental initiatives. The meeting provided a valuable platform for exchanging ideas, discussing innovative solutions, and exploring collaborative efforts aimed at environmental restoration and sustainability.



India Decarbonization Conference: Shaping a Sustainable Future for the Built-Environment

The **ASHRAE Student Branch, MAIT**, attended *“India Decarbonization Conference: Shaping a Sustainable Future for the Built-Environment”*, organized by **ASHRAE RAL** and hosted by the **ASHRAE India Chapter** from **15th - 16th December 2023** at **Pride Plaza Hotel, Aerocity, New Delhi**.

The event featured eminent personalities from industry and academia worldwide, including **ASHRAE President Ms. Ginger Scoggins** and other ASHRAE officials from the USA.

Under the guidance of **Dr. Vaibhav Jain**, MAIT students participated in the **Student Poster Making Competition**, promoting creativity and awareness about decarbonization.

Mr. Mayank Jately, a 3rd-year ME student, earned the **Rising Star Position** in the competition. Additionally, MAIT students contributed as event volunteers, showcasing their dedication and enthusiasm throughout the conference.





Maharaja Agrasen Institute of Technology

Department of Mechanical Engineering

Brahmgupt Block, Block No. II,
Maharaja Agrasen Institute of Technology
PSP Area, Plot No. 1, Sector – 22, Rohini, Delhi – 110086.