



CHANDIGARH ENGINEERING COLLEGE CGC, LANDRAN, MOHALI

Building Careers. *Transforming lives.*



MECHNOTIMES

Department of Mechanical Engineering
NEWSLETTER

VOLUME-8

ISSUE-I

(JULY-SEPTEMBER 2023)

VISION OF CHANDIGARH ENGINEERING COLLEGE-CGC, LANDRAN

To become a leading institute of the country for providing quality technical education in a research-based environment for developing competent professionals and successful entrepreneurs.

MISSION OF CHANDIGARH ENGINEERING COLLEGE-CGC, LANDRAN

1. To provide state of the art infrastructure and engage proficient faculty for enhancing the teaching learning process to deliver quality education.
2. To give a conducive environment for utilising the research abilities to attain new learning for solving industrial problems and societal issues.
3. To collaborate with prominent industries for establishing advanced labs and using their expertise to give contemporary industry exposure to the student and faculty.
4. To cater opportunities for global exposure through association with foreign universities.
5. To extend choice-based career options for students in campus placements, entrepreneurship and higher studies through career development program.



DEPARTMENT OF MECHANICAL ENGINEERING

Vision of the Department

To emerge as centre of quality education for creating competent mechanical engineers catering to the ever-changing needs of industry and society.

Mission of the Department

M1: To provide quality education by constantly updating departmental resources and using effective teaching learning methodology.

M2: To promote research practices in the field of mechanical engineering in pursuit of academic excellence and for the benefit of society.

M3: To establish industrial collaborations for imparting contemporary knowledge to keep pace with the technological challenges in the interdisciplinary and core areas of mechanical engineering.

M4: To provide opportunities to the students for global exposure through international collaborations.

M5: To nurture students through pre-placement training programs to succeed in campus placements and to provide guidance for entrepreneurship and higher studies.



EDITOR'S COLUMN

A newsletter reflects the vision and mission of a department. It also showcases events, activities, and academic accomplishments. The field of mechanical engineering is a continuous pursuit to improve the world. By embracing innovation and sustainability, we can bring about positive change and make a lasting impact on society. While we are proud of our past achievements, we also look to the future with excitement. The possibilities for mechanical engineering are boundless, and we are committed to preparing the next generation of engineers to meet the demands of tomorrow. As readers and contributors to this publication, you are integral to this transformative journey, and we eagerly anticipate the exciting advancements that await us. We are delighted to share glimpses of the activities undertaken by our enthusiastic students under the guidance of their faculty as they navigate through this period. We trust that this culture of disseminating the newsletter will endure indefinitely and serve as a model for others to emulate.



AISHNA MAHAJAN

EDITOR-IN-CHIEF

MECHNOTIMES

FROM EDITORIAL'S BOARD

Welcome to our latest edition of Mechnotimes of Mechanical Department Newsletter of Chandigarh Engineering College-CGC, Landran for JULY-SEPTEMBER 2023. As we venture into the realm of engineering and technology, we are reminded of the vast opportunities and responsibilities that lie ahead. In this editorial, we underscore the significance of embracing innovation and sustainability to propel progress in the mechanical world. Innovation is the lifeblood of the engineering discipline. From the advent of the steam engine to the contemporary electric vehicle, innovation has moulded the way we live, work, and interact with the world. As budding mechanical engineers, we are at the forefront of this dynamic metamorphosis, constantly pushing the limits of what is achievable.



SHRESTHA PRATAP SINGH (2237670), SEM III

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EXPERT LECTURE ON “RECENT INNOVATIONS AND TECHNOLOGICAL ADVANCEMENTS IN THE REALM OF THERMAL ENGINEERING”

On the 10th of August 2023, an Expert Lecture titled "Recent Innovations and Technological Advancements in the Realm of Thermal Engineering" was arranged by the Department of Mechanical Engineering. Dr. Sandeep Singh, Associate Professor hailing from Punjabi University, Patiala, was the distinguished speaker for this enlightening event. Dr. Singh shared valuable insights with the students, providing them with a comprehensive overview of the cutting-edge developments and transformative technologies in the field of Thermal Engineering. During the lecture, the students had the privilege of learning about the latest methodologies and innovations that have been instrumental in reshaping the landscape of Thermal Engineering. This knowledge imparted by Dr. Sandeep Singh not only expanded their understanding of the subject but also fuelled their enthusiasm for staying abreast of the dynamic changes and breakthroughs in this ever-evolving field.



INDUSTRIAL VISIT TO G.R. INDUSTRIES

On August 11, 2023, the Department of Mechanical Engineering arranged an Industrial Visit to GR Industries for the students. Throughout this visit, students were exposed to the most contemporary manufacturing processes and state-of-the-art machinery, including CNC, HMC and VMC Machines. They had the opportunity to explore various sections within the plant, such as Milling, Turning, Grinding, Quality Control, Testing, Packaging, and Dispatch, gaining first-hand knowledge about the operational workflow at GR Industries.

This industrial visit served as a valuable learning experience, allowing students to witness and understand the intricacies of manufacturing and quality control processes in a real-world setting, further enhancing their grasp of the subject.



MY STORY- MOTIVATIONAL SESSION BY A SUCCESSFUL INNOVATOR

On the 17th of August 2023, the Department of Mechanical Engineering hosted a motivational session featuring successful innovator, Dr. Charanjeet Singh, the Founder and CEO of Modern Manufactures in Mohali, Punjab. Dr. Charanjeet Singh in his capacity as the guest speaker, inspired the students to explore the path of entrepreneurship. He graciously shared his personal journey, shedding light on pivotal aspects like idea generation, implementation strategies, the significance of adopting the right approach, and the methods for effective execution.

This event served as an invaluable platform for students to glean insights from a seasoned entrepreneur, encouraging them to embrace their innovative potential and chart their own course in the world of business and innovation.



THRUST 2K23...CELEBRATING ENGINEER'S DAY

Thrust2k23 aimed primarily to commemorate the legacy of Sir M. Visvesvaraya while underscoring the dynamic and forward-thinking essence of the engineering profession. The Mechnorobs Club, Department of Mechanical Engineering, meticulously coordinated this grand event in collaboration with the various engineering departments of CEC-CGC Landran. The occasion featured an impressive roster of Distinguished Alumni who were invited to partake in an enlightening experience-sharing session and a thought-provoking Panel Discussion centred around the theme of 'Engineering for a sustainable future'. The panel discussions served as a noteworthy platform for these alumni to impart their wisdom, addressing pressing issues confronting the engineering community. This allowed students to gain a multifaceted perspective on the challenges and opportunities present in the corporate landscape.

To ensure a holistic experience, a diverse array of Technical and Non-Technical events were organized, followed by a lively Cultural segment and a Prize distribution ceremony. Non-Technical competitions encompassed activities such as Sketching, LAN Gaming, Debates, Photography, and even Arm Wrestling. The inclusion of cultural events infused a lively and inclusive dimension into the festivities, fostering camaraderie and highlighting the rich diversity that characterizes the engineering community.



INDUSTRIAL VISIT TO CHEEMA BOILERS LTD.

On the 22nd of September 2023, the Department of Mechanical Engineering at Chandigarh Engineering College-CGC, Landran, organized an Industrial Visit to Cheema Boilers Limited, a world-renowned engineering solutions company with cutting-edge manufacturing facilities. This visit provided students with a unique opportunity to gain first-hand exposure to the industrial processes behind the production of boilers and related products. The students had the privilege of observing the entire manufacturing process, including material handling and the rigorous testing procedures employed during boiler production. To enrich their understanding, engineers from Cheema Boilers Limited offered detailed insights into these processes, sharing their expertise and addressing any questions posed by the students. This experience not only exposed students to state-of-the-art manufacturing but also fostered a deeper appreciation for the complexities and precision required in this specialized industry.



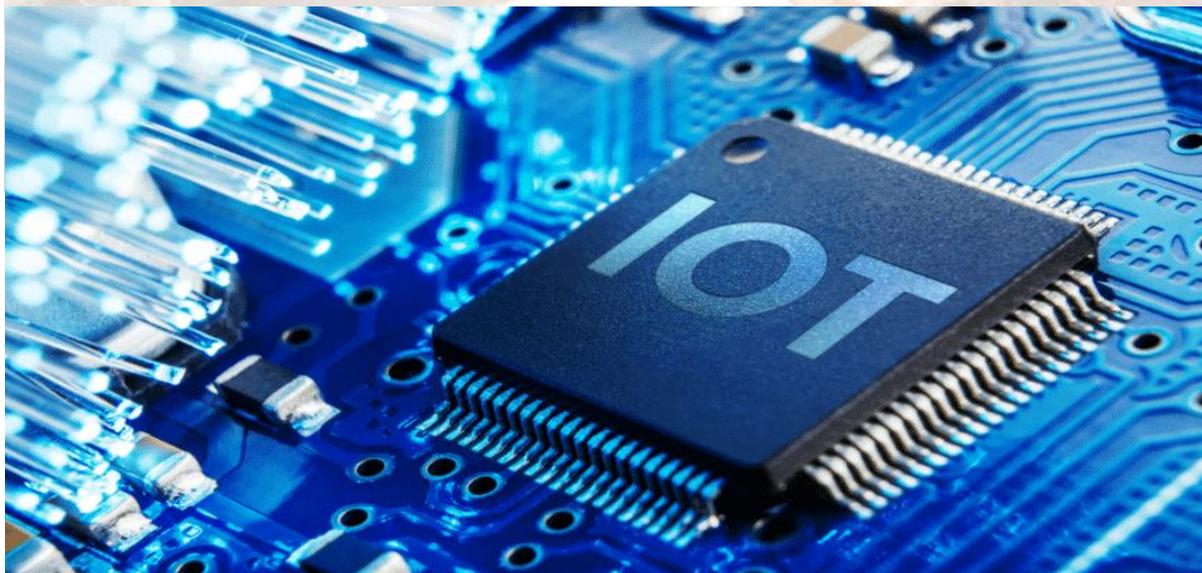
INTERNET OF THINGS (IOT)

The Internet of Things (IoT) is an emerging paradigm that enables the communication between electronic devices and sensors through the internet in order to facilitate our lives. IoT use smart devices and internet to provide innovative solutions to various challenges and issues related to various business, governmental and public/private industries across the world.

One of the most obvious changes manufacturers have witnessed in recent times is the move from mechanical systems to software-driven tools. Many have already made significant progress. What once needed to be prototyped in physical form is now simulated on a screen and product iterations carried out without costly prototyping.

Innovation is also coming from software found in mechatronic products that connect directly to the internet. This is transforming products into IoT-driven intelligent devices that are capable of communicating with the manufacturer once they've left the production line.

As a result, mechanical engineers will need to take the following three considerations into account when designing their products:



- Control will be governed by software
- Over-the-air product upgrades
- Sensors-driven innovation



Written by: Shrestha Pratap Singh (2237670), Sem III

G20 SUMMIT 2023

The 18th G20 Summit of 2023 recently concluded in New Delhi, India, marking the first-ever G20 summit hosted by the country. The summit's theme, "Vasudhaiva Kutumbakam" or "One Earth, One Family, One Future" is rooted in ancient Sanskrit texts and the goal of sustainable development. India was successfully able to achieve consensus around the New Delhi Declaration early on in the G20 Summit, which saw a dilution in the position taken by the U.S. and EU on Russia, besides focus on UN Sustainable Development Goals, climate action and green development initiatives, multilateral financing, digital public



infrastructure, artificial intelligence (AI), and international taxation, among others

Key outcomes of the G20 Summit 2023

Prime Minister Narendra Modi's diplomatic coup: PM Modi views this summit as India's diplomatic milestone, with its G20 presidency serving as a platform to amplify the Global South's concerns. In a personal capacity, the G20 Summit's outcomes are important for the Indian leader as he faces general elections next year. At the Summit, India was able to leverage its economic significance to garner support from all G20 member nations for a Leaders' Declaration recognizing the conflict in Ukraine without specifying any aggressor. Modi, who chaired the Summit, also advocated for reforming global institutions like the United Nations Security Council (UNSC) to align with the changing world dynamics, which received backing from the United States. The timing of the G20 Summit was also opportune, following India's successful moon landing under the [Chandrayaan-3](#)

Written by: Yuvraj Singh (2237678), Sem III

HYDROGEN FUEL CELL VEHICLES: A SUSTAINABLE APPROACH FOR FUTURE

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You've likely heard a lot about electric vehicles lately, as well as news about legislation to reduce carbon emissions from vehicles. But there's another kind of zero-emission vehicle, one that emits only water vapor as it carries you down the road. That's the hydrogen fuel-cell vehicle, related to an EV but with specific differences that make hydrogen cars different and much rarer.

Since 2015, three hydrogen -powered cars have been offered for sale from three different car companies: the Honda Clarity Fuel Cell, the Hyundai Nexa SUV, and the Toyota Mirai. But Honda has now ended production of all models of the Clarity, and Hyundai has sold fewer than 1500 Nexa SUVs thus far.

A hydrogen fuel-cell vehicle (HFCV for short) uses the same kind of electric motor to turn the wheels that a battery-electric car does. But it's powered not by a large, heavy battery but by a fuel-cell stack in which pure hydrogen (H₂) passes through a membrane to combine with oxygen (O₂) from the air, producing the electricity that turns the wheels plus water vapor. What this means is that a fuel-cell vehicle is technically a series hybrid, which is why they are sometimes classified as fuel-cell hybrid electric vehicles (FCHEV).



Written by: Anuraag (2102424), Sem V

IMPORTANCE OF MEDITATION FOR STUDENTS

Improved academic performance: A 2023 study published in the journal Nature Neuroscience found that students who learned to meditate had improved attention and memory. A 2022 study published in the journal Educational Psychology Review found that meditation can also improve students' executive functioning skills, such as planning, organization, and self-control. These skills are essential for academic success.

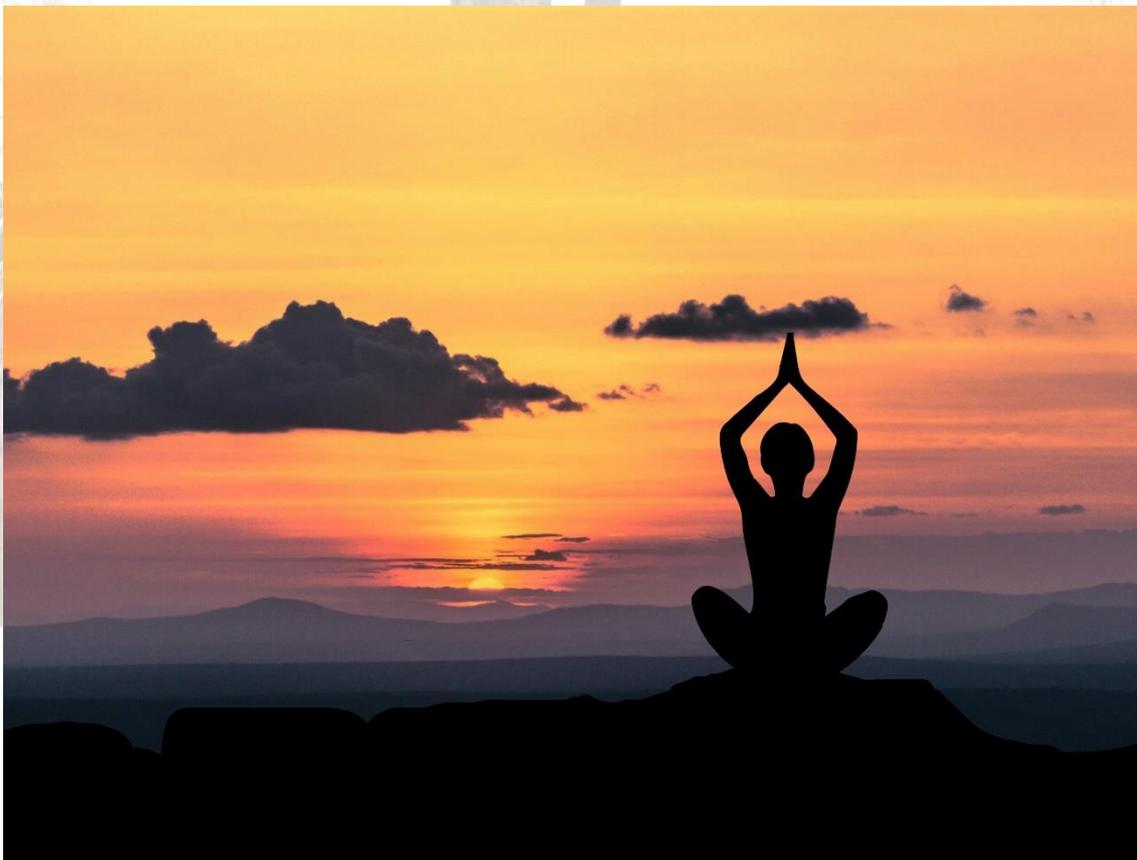
Reduced stress and anxiety: Meditation can help students to manage stress and anxiety, which can improve their overall well-being and academic performance. A 2021 study published in the journal Frontiers in Psychology found that meditation can help to reduce stress and anxiety in college students.



Increased emotional regulation: Meditation can help students to develop their emotional regulation skills, which can help them to cope with stress and challenges in a healthy way. A 2020 study published in the journal PLoS One found that meditation can help to improve emotional regulation in adolescents.

Improved sleep quality: Meditation can also help students to improve their sleep quality. A 2019 study published in the journal Sleep found that meditation can help to reduce sleep latency and improve sleep efficiency in college students.

Overall, the research suggests that meditation can have a number of positive benefits for student growth, including improved academic performance, reduced stress and anxiety, increased emotional regulation, and improved sleep quality.



Written By: Nikhil (2102438) SEM V