CHANDIGARH ENGINEERING COLLEGE CGC, LANDRAN, MOHALI

Building Careers. Transforming lives.

Mechnotimes

NEWSLETTER

Department of Mechanical Engineering

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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 conductive environment foe 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 stands as a testament to the vision and mission of a department, serving as a platform to highlight key events, innovative activities, and notable academic achievements. In the ever-evolving field of mechanical engineering, the pursuit of innovation and sustainability remains at the forefront, driving progress to shape a better world and leave a meaningful impact on society. While we honor our past accomplishments, our focus is firmly set on the future, brimming with opportunities and boundless possibilities. The discipline of mechanical engineering holds immense potential to redefine the boundaries of technology and human ingenuity. With unwavering commitment, we aim to prepare the next generation of engineers to tackle the challenges of tomorrow with competence and creativity. This newsletter not only celebrates the remarkable contributions of our students and faculty but also serves as a window into their inspiring journey of growth and discovery. As valued readers and contributors, you are integral to this transformative journey. Your engagement fuels the spirit of progress and innovation that defines our community. We take great pride in sharing these glimpses of our department's dynamic endeavours and trust that this culture of knowledge-sharing will endure, inspiring others to follow in our footsteps. Let this publication be a beacon of excellence and a testament to the unwavering commitment to advancing the field of mechanical engineering.

Dr. NARINDER KUMAR

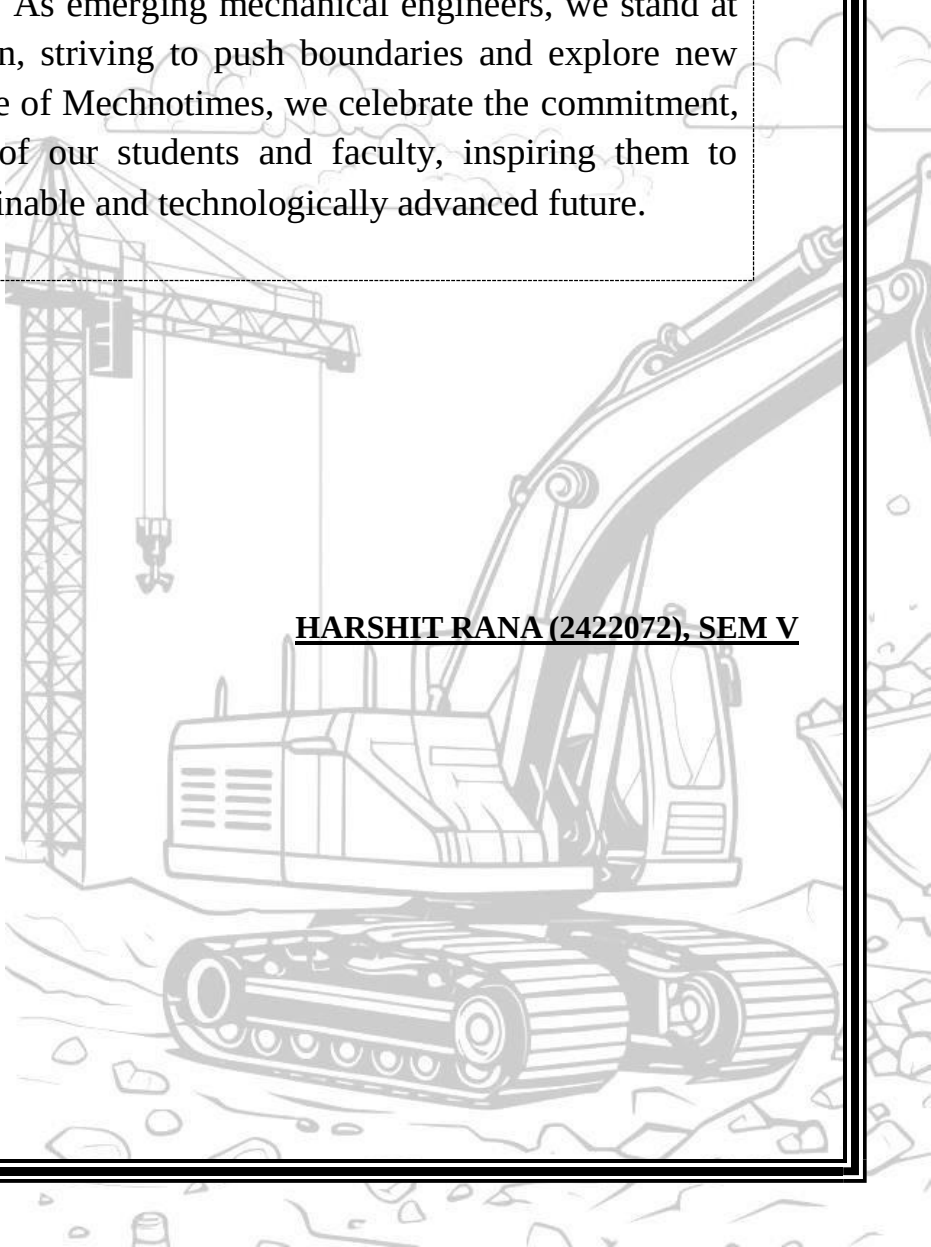
EDITOR-IN-CHIEF

MECHNOTIMES

FROM EDITORIAL'S BOARD

Welcome to the latest edition of Mechnotimes, the official newsletter of the Mechanical Engineering Department at Chandigarh Engineering College (CGC), Landran, covering the period from July to September 2025. As we continue to advance in the dynamic world of engineering and technology, we acknowledge the growing opportunities and responsibilities that define our journey. This edition focuses on the pivotal role of innovation and sustainability in shaping the future of mechanical engineering.

Innovation remains the driving force behind engineering progress—from the historic development of the steam engine to the latest advancements in electric mobility and smart manufacturing—continuously transforming how we live and interact with our surroundings. As emerging mechanical engineers, we stand at the edge of this transformation, striving to push boundaries and explore new possibilities. Through this issue of Mechnotimes, we celebrate the commitment, creativity, and achievements of our students and faculty, inspiring them to contribute toward a more sustainable and technologically advanced future.



HARSHIT RANA (2422072), SEM V

Faculty Development Program on “Vistas of Innovation: Multidisciplinary Approach in

A five-day Faculty Development Program (FDP) on *“Vistas of Innovation: Multidisciplinary Approach in Science and Technology”* was organized by the Department of Mechanical Engineering, CEC-CGC, Landran, from June 30 to July 4, 2025, focusing on the exploration of advanced technologies and their integration across diverse scientific and engineering domains. Eminent experts from CDAC Mohali and CCET Chandigarh delivered sessions on emerging areas such as Artificial Intelligence (AI), Internet of Things (IoT), and Cybersecurity tools, providing participants with valuable insights into their practical applications in research and industry. The FDP served as an effective platform for knowledge sharing, fostering innovation, and enhancing interdisciplinary collaboration among faculty members, making it a highly enriching experience that increased awareness of technological advancements shaping the future of science and technology

Experts sharing valuable insights and participants learning during the FDP

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Expert Talk on “Green Hydrogen: Powering a Renewable and Sustainable Future”

An Expert Talk on *“Green Hydrogen: Powering a Renewable and Sustainable Future”* was organized by the Department of Mechanical Engineering, CEC-CGC, Landran on July 15, 2025, and was delivered by Mr. J.P. Kundra, Consultant Engineer at Cheema Boilers Limited. During the session, Mr. Kundra highlighted the significance of green hydrogen in achieving a sustainable and low-carbon energy future, explaining various hydrogen production technologies, its industrial applications, and the policy frameworks required for large-scale adoption. Students gained valuable insights into the role of hydrogen in clean energy systems and its potential to transform industrial processes, making the session highly informative and inspiring while enhancing their understanding of emerging renewable energy solutions..

Mr. J.P. Kundra delivering the Expert Talk on “Green Hydrogen: Powering a Renewable and Sustainable Future”

Session on “Angel Investment/VC Funding Opportunity for Early Stage

A session on “Angel Investment/VC Funding Opportunity for Early Stage Entrepreneurs” was organized on July 29, 2025, with the objective of providing participants a comprehensive understanding of the investment landscape and funding opportunities for startups. The session was delivered by Mr. H.S. Cheema, Chairman, Cheema Boilers Limited, Mohali, who highlighted key aspects such as investor expectations, legal and financial considerations, and strategies to enhance fundraising readiness. Participants also gained insights into various funding sources, including angel investors and venture capital firms, along with effective approaches to engage with them. The session proved highly informative, equipping aspiring entrepreneurs with the knowledge and confidence required to secure investments and scale their ventures successfully.

Mr. H.S. Cheema interacting with faculty members and students during the Expert Talk

Industrial Visit to Godrej & Boyce Co. Ltd., Mohali

The Mechnorobs Club of Department of Mechanical Engineering, Chandigarh Engineering College-CGC Landran, organized an Industrial Visit to Godrej & Boyce Co. Ltd., Mohali on 13th August 2025. The visit offered participants valuable exposure to advanced manufacturing practices, precision engineering processes, and quality control systems. Students explored various production lines, assembly units, and product testing areas, gaining first-hand knowledge of industrial workflows and safety protocols. The visit provided participants with a meaningful opportunity to link theoretical concepts from academics to real-world industrial practices.

Group photo outside Godrej and Boyce as part of the educational industrial visit.

Industrial Visit to Guru Gobind Singh Super Thermal Power Plant, Ropar

The Mechnorobs Club of the Department of Mechanical Engineering, Chandigarh Engineering College–CGC Landran, organized an industrial visit to Guru Gobind Singh Super Thermal Power Plant, Ropar on August 27, 2025. The visit provided students with valuable practical exposure to large-scale power generation, turbine operations, and energy distribution systems. Participants explored key sections of the plant, including the boiler unit, turbine hall, and control room, while also gaining insights into industrial safety practices and operational protocols. Overall, the visit was highly informative and effectively bridged the gap between theoretical learning and real-world applications in the power sector.

A glimpse of the Industrial Visit to Guru Gobind Singh Super Thermal Power Plant, Ropar

Faculty Achievements

Best Teacher Award

Dr. Sachin Mohal, Associate Professor in the Department of Mechanical Engineering, received the Best Teacher Award during the Teachers' Day celebrations organized by CGC Landran on September 5, 2024.

Dr. Sachin Mohal receiving award from the Hon'ble Management of CGC Landran

Achiever Award

Dr. Rachin Goyal, Professor and Head, in the Department of Mechanical Engineering, received Achiever Award during the Teachers' Day celebrations.

Award for Special Achievement

Dr. Narinder Kumar, Associate Professor in the Department of Mechanical Engineering, was honoured with the Award for Special Achievement during the Teachers' Day celebrations.

Mechanical Engineering Role in Advancing Green Hydrogen Technologies

Green hydrogen is rapidly gaining importance as a clean and sustainable energy source, produced using renewable energy through electrolysis with zero carbon emissions. It offers a promising alternative to fossil fuels and is being widely explored for applications in transportation, power generation, and industrial processes. As nations aim to achieve carbon neutrality, green hydrogen is emerging as a key component of the future energy mix.Mechanical engineering plays a vital role in enabling this transition. Engineers are involved in the design and optimization of electrolyzers, storage systems, and hydrogen transport mechanisms. Due to hydrogen's low density and high diffusivity, its storage poses significant challenges, which are addressed through advanced high-pressure tanks, cryogenic systems, and innovative materials.

Additionally, integrating hydrogen systems with renewable energy sources requires effective thermal management, system design, and automation—areas where mechanical engineers provide critical solutions. Modern tools such as simulation and predictive maintenance further enhance system performance and reliability.

Although challenges like high costs and infrastructure limitations remain, ongoing research and technological advancements are accelerating adoption. Overall, mechanical engineers are central to advancing green hydrogen technologies, contributing to a cleaner, more sustainable, and energy-efficient future.

Written by: Charanjit Singh (2337762), Sem III

Mechanical Engineering Innovations in Electric Vehicles (EVs)

Electric Vehicles (EVs) are revolutionizing the transportation sector by offering an eco-friendly alternative to conventional internal combustion engine vehicles. With zero tailpipe emissions and improved energy efficiency, EVs are playing a crucial role in reducing environmental pollution and dependence on fossil fuels. As the demand for sustainable mobility increases, advancements in EV technology continue to accelerate globally.

Mechanical engineering is at the core of EV development, contributing to the design, performance, and efficiency of various components. Engineers focus on developing lightweight vehicle structures using advanced materials to enhance energy efficiency and driving range. Thermal management of battery systems is another critical area, as maintaining optimal temperature ensures safety, longevity, and performance of lithium-ion batteries.

In addition, mechanical engineers design efficient drivetrain systems, including electric motors, gear mechanisms, and regenerative braking systems that recover energy during deceleration. These innovations significantly improve overall vehicle efficiency. Engineers also play a role in optimizing aerodynamics to reduce drag and enhance vehicle performance.

The development of reliable charging infrastructure and integration with smart grid systems further highlights the interdisciplinary role of mechanical engineers. Simulation tools, automation, and advanced manufacturing techniques are widely used to improve design accuracy and production efficiency.

Written by: Karan Tayal (2337764), Sem III