

MECH VISTA

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Department of Mechanical Engineering



Gandhi Institute of Advanced Computer and Research

Prajukti Vihar, Aurobind Marg, RAYAGADA – 765002, Odisha

www.giacr.ac.in

mail@giacr.ac.in

Editor-in-Cheif

Sovan Prasad Behera

Senior Lecturer

Department of Mechanical Engineering

It is a privilege to present the current issue of the Bi-Annual Newsletter of the Department of Mechanical Engineering. This publication highlights the key academic, technical, and co-curricular activities undertaken during the past six months.

The newsletter captures departmental events such as workshops, seminars, expert lectures, industrial visits, student projects, faculty achievements, and outreach activities. These initiatives reflect our commitment to providing quality technical education and practical exposure to our students. Such contributions not only enhance communication skills but also foster confidence, creativity, and professional growth.

I sincerely thank all students, faculty members, and the editorial team for their valuable contributions and continuous support in bringing out this issue successfully. Their dedication and teamwork strengthen the academic culture of the department.

Let this newsletter inspire us to pursue excellence, innovation, and responsibility in shaping the built environment for a better tomorrow.

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Department of Mechanical Engineering

Gandhi Institute of Advanced Computer and Research, Rayagada

Message from the Principal



It is truly heartening to witness the Mechanical Engineering Department of our college publish its annual newsletter “GIACR MechVista”—a compelling testament to its vibrant academic culture, technological foresight, and unwavering commitment to excellence. This publication encapsulates the department’s dynamic engagement with both foundational engineering principles and cutting-edge innovations.

Mechanical Engineering, long regarded as the backbone of industrial progress, continues to evolve and expand its influence across emerging domains such as autonomous mechanical systems, renewable energy technologies, smart manufacturing, and sustainable infrastructure development. These areas not only redefine traditional engineering paradigms but also position mechanical engineers at the forefront of global problem-solving.

In response to the rapidly shifting landscape of science and technology, the department has proactively introduced a suite of initiatives—ranging from interdisciplinary curriculum enhancements and industry-aligned training modules to research-driven student projects and innovation labs. These efforts are strategically designed to cultivate technical proficiency, systems thinking, and a future-ready mindset among students.

This annual newsletter serves as a reflection of the department’s holistic approach to education and innovation. It showcases key academic activities, research achievements, collaborative ventures, and outreach initiatives that collectively foster intellectual growth, technological advancement, and meaningful societal impact.

Message from the Head



Greetings!

I am truly delighted to witness the launch of the Department of Mechanical Engineering's annual newsletter "GIACR MechVista"—a vibrant and insightful platform that fosters meaningful connection among students, faculty, alumni, and stakeholders. This publication serves not only as a chronicle of the department's dynamic activities but also as a celebration of its enduring commitment to engineering excellence.

This edition proudly showcases hallmark initiatives such as the *Project Expo*, where student ingenuity meets real-world application, and the department's ongoing *Research and Development* efforts that push the boundaries of innovation in areas like thermal systems, robotics, materials science, and sustainable design. These features reflect the academic rigor, technical depth, and forward-thinking spirit that define our department.

Equally commendable are the contributions of our dedicated faculty members, whose mentorship and scholarly pursuits continue to elevate the standards of Mechanical Engineering education. The newsletter also highlights best practices in pedagogy, industry collaboration, and experiential learning—reinforcing our mission to produce engineers who are not only technically proficient but also socially responsible.

I extend my heartfelt congratulations to all the students and faculty of the Mechanical Engineering Department for their collaborative effort and unwavering dedication in bringing out this publication. May it continue to inspire innovation, foster excellence, and strengthen the bonds within our academic community.

Vision and Mission of the Institution

Vision

To become a globally recognized, value-driven educational institution committed to excellence in delivering quality education, nurturing students' inherent talents, and developing innovative professionals in technical and managerial fields, thereby equipping them to meet the future challenges of the global economy.

Mission

M₁: To deliver quality education through effective teaching–learning processes that foster academic excellence in technical and managerial disciplines.

M₂: To nurture students' inherent talents by encouraging creativity, critical thinking, innovation, and lifelong learning.

M₃: To develop competent and ethical professionals with strong values, leadership skills, and social responsibility.

M₄: To promote industry-oriented learning and research through collaboration, practical exposure, and adoption of emerging technologies.

M₅: To prepare globally competitive graduates capable of adapting to evolving challenges and contributing effectively to the global economy.

Vision & Mission of Department of Mechanical Engineering

VISION

To be a premier knowledge hub in mechanical engineering education, entrepreneurship, and industry engagement, producing skilled engineers ready to address industrial challenges.

MISSION

M1. To impart strong fundamental and advanced knowledge in mechanical engineering through effective teaching–learning practices and modern pedagogical methods.

M2. To promote innovation and entrepreneurship by encouraging creative thinking, problem-solving, and startup-oriented initiatives among students.

M3. To strengthen industry engagement through internships, industrial training, consultancy, and collaborative projects to enhance practical skills.

M4. To develop technically competent and ethical engineers with leadership qualities, professional integrity, and social responsibility.

M5. To equip graduates with industry-relevant skills and adaptability to effectively address real-world engineering challenges.

Program Outcomes (POs)

- 1. Basic and Discipline specific knowledge:** Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.
- 2. Problem analysis:** Identify and analyses well-defined engineering problems using codified standard methods.
- 3. Design/ development of solutions:** Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.
- 4. Engineering Tools, Experimentation and Testing:** Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.
- 5. Engineering practices for society, sustainability and environment:** Apply appropriate technology in context of society, sustainability, environment and ethical practices.
- 6. Project Management:** Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.
- 7. Life-long learning:** Ability to analyse individual needs and engage in updating in the context of technological changes.

Program Educational Objectives

PEO₁: To impart science-based engineering education to develop professional skills that will prepare the students for immediate employment in relevant branch of mechanical engineering in industry.

PEO₂: To develop human potential to its fullest extent so that intellectually capable and creatively gifted leaders can emerge in range of professions.

PEO₃: To develop among students the awareness of and the competence to be savvy users of information technology.

PEO₄: To Develop among students the ability to work with others, in professional and social settings.

PEO₅: To develop a global view among students so that they can appreciate diversity in the world and in intellectual pursuits and the desire and ability to keep learning throughout life.

Programme Specific Outcome

PSO 1: Apply the acquired knowledge in design, thermal, manufacturing and interdisciplinary areas for solving industry and socially relevant problems.

PSO 2: To enhance the abilities of students by imparting knowledge in emerging technologies to make them confident mechanical Engineers.

PSO 3: Provide socially responsible, eco –friendly broad base solution to mechanical Engineering related problems adopting professional ethics.

Plantation Drive in GIACR Campus by Walkers Club

A plantation drive was organised on the GIACR campus on 7th July 2022 by the Walkers Club, with active participation from the Mechanical Engineering Department. The event brought together students, faculty members, and club volunteers, all united by a shared commitment to environmental conservation. Their enthusiastic involvement made the programme both meaningful and impactful.



The drive began with a brief introduction highlighting the importance of tree plantation in promoting ecological balance, reducing pollution, and enhancing the aesthetic appeal of the campus. Students, guided by faculty and Walkers Club members, took part in digging pits, planting saplings, and watering them. The collaborative effort created a lively atmosphere of teamwork and responsibility.

A total of 100 saplings of various species were planted across designated areas of the campus. Each participant ensured that the saplings were properly placed and supported for healthy growth. The Mechanical Department played a significant role by coordinating logistics and encouraging maximum student participation.

The plantation drive concluded with a pledge to protect the planted saplings and continue supporting such eco-friendly initiatives. The success of the event reflected the institute's dedication to creating a greener, cleaner, and more sustainable campus environment.

Independence Day Celebration at GIACR

Independence Day was celebrated with great pride and patriotism at GIACR on 15th August 2022. The ceremony began with the hoisting of the national flag by the Principal, who addressed the gathering with inspiring words on the significance of India's freedom and the responsibilities of today's youth in nation-building. The event was attended by all Heads of Departments, faculty members, and students from various departments, creating an atmosphere of unity and respect for the nation.



The celebration included a short cultural segment where students presented patriotic songs and speeches, reflecting the spirit of independence and honouring the sacrifices of the country's freedom fighters. The vibrant participation added charm and meaning to the occasion.

Following the formal ceremony, a friendly cricket match was organised between different departments. The match brought enthusiasm and excitement among students and staff, promoting sportsmanship, teamwork, and healthy competition. Participants displayed great energy and coordination, making the event both enjoyable and memorable.

The Independence Day celebration at GIACR thus served not only as a tribute to the nation but also as an opportunity for students and faculty to come together, strengthen bonds, and celebrate the values of freedom, unity, and fraternity.

Swachh Bharat Drive

On the occasion of Gandhi Jayanti, a Swachh Bharat Drive was organised by the Department of Mechanical Engineering on 2nd October 2022 as a tribute to Mahatma Gandhi's vision of cleanliness and community responsibility. The initiative was strongly supported and encouraged by the Principal, **Dr. Pratap Chandra Mishra**, and **Shri Anand Gouda**, Administrative Officer of GIACR, whose presence motivated the participants to contribute wholeheartedly to the cause.



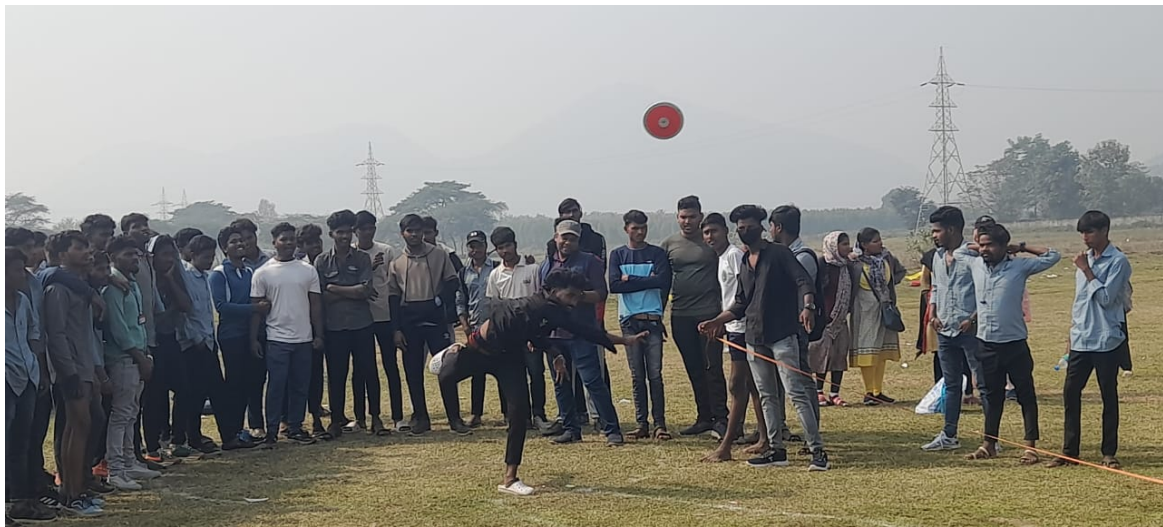
The drive focused on cleaning the overbridge at Rayagada, an area frequently used by the public and therefore requiring regular maintenance. Faculty members, especially the Heads of various departments, extended their full cooperation by joining the activity and guiding the students. Their involvement highlighted the institute's collective commitment toward social responsibility and public welfare.

Students of the Mechanical Engineering Department played a central role in the drive. Equipped with cleaning tools, gloves, and garbage bags, they enthusiastically participated in sweeping, removing litter, and segregating waste. Their active engagement not only helped in

restoring cleanliness to the overbridge but also spread awareness among the local community about the importance of maintaining hygiene in public spaces.

The Swachh Bharat Drive concluded with a short awareness interaction where faculty members encouraged students to continue such practices regularly and act as ambassadors of cleanliness. The event successfully reflected the spirit of unity, discipline, and social commitment, reinforcing GIACR's dedication to contributing positively to society.

Athletic Meet



The students of the Department of Mechanical Engineering actively participated in the Athletic Meet held on 17th November 2022 with great enthusiasm and team spirit. The event provided a platform for students to showcase their physical fitness, sportsmanship, and competitive skills beyond academics. Various track and field events such as 100m and 200m races, relay race, long jump, shot put, and high jump were conducted during the meet.

Mechanical Engineering students participated in large numbers and displayed remarkable performance in several events. Their dedication, discipline, and teamwork were evident throughout the competition. Some students secured top positions, bringing pride to the department. Faculty members were present to encourage and motivate the participants, boosting their confidence and morale.

The athletic meet not only promoted physical well-being but also strengthened unity and coordination among students. The event concluded with a prize distribution ceremony, appreciating the efforts and achievements of all participants.

Plantation Drive



The Department of Mechanical Engineering organized a plantation drive on 23rd November 2022 within the premises of GIACR with the objective of promoting environmental awareness and sustainability. The programme was conducted in the college garden, where a total of 51 saplings were planted by students and faculty members.

The initiative aimed to encourage students to understand the importance of trees in maintaining ecological balance, reducing pollution, and improving the overall campus environment. Various types of saplings, including fruit-bearing and shade-giving plants, were planted to enhance greenery and biodiversity within the campus. Faculty members guided the students on proper planting techniques and emphasized the responsibility of nurturing the plants for their healthy growth.

The plantation drive witnessed enthusiastic participation and reflected the department's commitment towards environmental conservation. The event concluded with a pledge by students to protect and care for the newly planted saplings and contribute towards a greener future.

Covid-19 Awareness Programme



The Department of Mechanical Engineering of GIACR organized a Covid-19 Awareness Programme on 5th December 2022 at Barijholra village. The programme aimed to educate the rural community about preventive measures,

vaccination, hygiene practices, and the importance of following government guidelines to control the spread of COVID-19.

Students and faculty members actively participated in the awareness campaign by interacting with villagers and distributing informative pamphlets. They explained the significance of wearing masks, maintaining social distancing, regular hand washing, and timely vaccination. Demonstrations on proper hand hygiene and mask usage were also conducted to ensure better understanding among the villagers.

The villagers responded positively and appreciated the initiative taken by the department. The programme successfully enhanced awareness regarding health and safety measures and reflected the department's commitment towards social responsibility and community service in the Rayagada region.