MECH VISTA

Vol-6, Issue-1, Jun-2023

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.

Published by
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

M_1: To deliver quality education through effective teaching–learning processes that foster academic excellence in technical and managerial disciplines.

M_2: To nurture students' inherent talents by encouraging creativity, critical thinking, innovation, and lifelong learning.

M_3: To develop competent and ethical professionals with strong values, leadership skills, and social responsibility.

M_4: To promote industry-oriented learning and research through collaboration, practical exposure, and adoption of emerging technologies.

M_5: 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 skillsand 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

PEO_1: 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.

PEO_2: To develop human potential to its fullest extent so that intellectually capable and creatively gifted leaders can emerge in range of professions.

PEO_3: To develops among students the awareness of and the competence to be savvy users of information technology.

PEO_4: To Develop among students the ability to work with others, in professional and social settings.

PEO_5: 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.

Republic Day Celebration at GIACR Rayagada

The Republic Day celebration at **GIACR, Rayagada** was organized on 26th January 2023with great enthusiasm and patriotic spirit. The event commenced with the unfurling of the **National Flag** by the Principal, followed by the singing of the **National Anthem** by all students, faculty, and staff members. In his address, the principal highlighted the significance of Republic Day and paid tribute to the **Constitution makers** who laid the foundation of a sovereign, democratic, and secular nation.

Students from various departments, including **Diploma Engineering**, showcased their patriotism through cultural performances such as **patriotic songs, dances, and skits** depicting India's freedom struggle and achievements in science, technology, and infrastructure. The campus was beautifully decorated with **tricolour flags and rangoli designs**, creating a festive ambiance.

Prizes were distributed to students who excelled in academics, sports, and extracurricular activities. The event concluded with a **vote of thanks** and the distribution of sweets among the participants. The celebration not only instilled a sense of national pride among the students but also reminded everyone of their duty to contribute towards the progress and unity of the nation. Overall, the Republic Day celebration at GIACR Rayagada was a grand and memorable event.

Participating in Startup Odisha Exhibition

Students of the Mechanical Engineering Department participated in the preliminary round of the Startup Odisha Exhibition on 14th February 2023. The event provided an excellent platform for young innovators to present their creative and entrepreneurial ideas.

The students showcased innovative concepts focusing on practical solutions, sustainability, and technological advancement. They confidently explained their project models, objectives, and potential market applications before the evaluation panel. Their ideas reflected strong technical knowledge combined with entrepreneurial vision.

The Manager of District Industries Centre Rayagada appreciated the students for their originality, presentation skills, and problem-solving approach. The feedback given by the officials encouraged the participants to refine and further develop their ideas.

The exhibition enhanced the students' exposure to the startup ecosystem and strengthened their confidence in pursuing entrepreneurship. The participation

not only highlighted their innovative abilities but also motivated them to transform their ideas into viable business ventures in the future.

Workshop on AutoCAD

A workshop on AutoCAD was organized by the Department of Mechanical Engineering on 4th March 2023 to enhance the technical drawing and design skills of students. The session was conducted by Dr. Tushar Kanta Satpathy, Associate Professor at Gandhi Academy of Technology and Engineering, Berhampur. The workshop aimed to provide practical exposure to computer-aided drafting and modelling techniques widely used in the mechanical engineering field.

Dr. Satpathy explained the fundamentals of AutoCAD, including drawing tools, editing commands, dimensioning, layering, and 2D drafting techniques. He also demonstrated real-time design examples to help students understand industrial applications. Participants actively engaged in hands-on practice sessions and clarified their doubts during the interactive discussion.

The workshop proved highly beneficial in strengthening students' design capabilities and improving their understanding of engineering graphics. It concluded with a vote of thanks, expressing gratitude to the resource person for his valuable guidance and insightful session.

Study Tour to Ghodahada Dam

The Department of Civil Engineering organized a study tour to Ghodahada Dam on 3rd April 2023. The dam, located in the Odisha near Digapahandi and about 45 km from Berhampur, serves as an important irrigation and water resource project in the region. The visit aimed to provide practical exposure to students regarding dam construction, reservoir management, and irrigation systems.

During the tour, students observed the structural components of the dam, including the spillway, sluice gates, and embankment sections. Faculty members explained the design principles, water distribution mechanism, and maintenance

practices followed at the site. The students also interacted with the site personnel to understand operational challenges and safety measures.

The study tour helped bridge the gap between theoretical knowledge and field application, enhancing students' understanding of hydraulic structures and water resource engineering in a real-world context.

Awareness Programme on "Say No to Tobacco"

The Department of Mechanical Engineering organized an Awareness Programme on "Say No to Tobacco" on 31st May 2023 at Barijola, Rayagada. The programme was conducted to educate the local community about the harmful effects of tobacco consumption on health and well-being.

Students and faculty members actively participated in the campaign and interacted with villagers to spread awareness about diseases caused by tobacco use, including cancer, respiratory problems, and heart ailments. The team explained the importance of adopting a healthy lifestyle and avoiding harmful habits. Informative pamphlets were distributed, and awareness slogans were displayed to convey the message effectively.

The residents of Barijola appreciated the initiative and showed interest in understanding the long-term impact of tobacco use. The programme helped in creating health consciousness among the public while instilling social responsibility among students. The initiative was a meaningful step towards promoting a healthier and tobacco-free community.

Celebration of International Yoga Day

The Department of Mechanical Engineering celebrated International Yoga Day on 21st June 2023 with great enthusiasm and active participation from students and faculty members. The programme was organized to promote the importance of yoga in maintaining physical fitness, mental well-being, and a balanced lifestyle. The event commenced in the morning with a brief introduction highlighting the significance of International Yoga Day, which is observed worldwide following the initiative of the Government of India and endorsed by the United Nations.

A trained instructor guided the participants through various yoga asanas, pranayama, and meditation techniques. Students performed postures such as Tadasana, Bhujangasana, and Vajrasana with dedication and discipline. Faculty members also actively joined the session, encouraging students to adopt yoga as a daily practice.

The programme concluded with a message emphasizing the role of yoga in enhancing concentration, reducing stress, and improving overall health, inspiring everyone to incorporate yoga into their regular routine.