MECH VISTA

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Department of Mechanical Engineering

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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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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.

Personality Development Classes

The Honorable Director of GIACR, Sri. Sri. Govind Prasad Rath, conducted a Personality Development class for the students of Mechanical Engineering on 20th January. The session was organized with the objective of guiding students towards holistic development and preparing them to face academic and professional challenges with confidence.

During the session, Sri Govind Prasad Rath emphasized the importance of discipline, positive attitude, effective communication, and ethical values in shaping a successful career. He motivated students to set clear goals, develop leadership qualities, and maintain self-confidence in all situations. Real-life examples and practical insights were shared to help students understand the significance of continuous learning and self-improvement.

The session was highly interactive, and students actively participated by asking questions and sharing their aspirations. The Director encouraged them to balance technical knowledge with strong personality traits to enhance employability and personal growth. The class proved to be inspiring and impactful, leaving students motivated to strive for excellence in both academics and life.

Republic Day Celebration at GIACR Rayagada

The Republic Day celebration at **GIACR, Rayagada** was organized with 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.

Blood Donation Camp

A Blood Donation Camp was organized for the students of Mechanical Engineering on 5th February 2024 in collaboration with AMO Odisha. The camp was conducted with the objective of promoting social responsibility and creating awareness about the importance of voluntary blood donation.

The programme witnessed enthusiastic participation from students, faculty members, and staff. Prior to the donation process, medical professionals conducted basic health check-ups to ensure the fitness of donors. The team from AMO Odisha efficiently managed the entire process, maintaining proper hygiene and safety measures throughout the camp.

A total of 56 units of blood were successfully collected during the drive. The contribution made by the students reflected their commitment to humanitarian values and community service. The organizers appreciated the donors for their noble gesture and encouraged others to participate in such life-saving initiatives in the future.

The Blood Donation Camp was a great success and served as a meaningful step toward supporting healthcare needs while instilling a spirit of empathy and service among the students.

Voters Awareness Programme

The Department of Mechanical Engineering conducted a Voters' Awareness Programme on 15th February 2024 at Sai Priya Nagar, Rayagada. The initiative was organized to create awareness among local residents about the importance of voting and active participation in the democratic process.

Students and faculty members actively participated in the programme and interacted with the community members to educate them about their voting rights and responsibilities. The team explained the significance of fair elections, ethical voting practices, and the role of citizens in strengthening democracy. Pamphlets and informative materials were distributed to spread awareness effectively.

The residents of Sai Priya Nagar appreciated the efforts of the department and showed keen interest in understanding the electoral process. The programme helped in fostering civic sense and social responsibility among students while encouraging the local community to exercise their franchise responsibly. The event was successful in promoting awareness and democratic values.

Soft-skill Training for Final year students

A Soft-Skill Training programme was organized for the final-year students on 18th February 2024. The session was delivered by Dr. Karunakar Karkaria, Assistant Professor of VIMS Rayagada. The objective of the programme was to enhance students' employability skills and prepare them to confidently face interviews and workplace challenges.

During the session, Dr. Karkaria emphasized the importance of effective communication, positive attitude, leadership qualities, and professional ethics. He highlighted how soft skills play a crucial role in career growth alongside technical knowledge. Practical guidance was provided on resume building, group discussions, interview techniques, and maintaining proper body language.

The training was interactive and engaging, with real-life examples and situational exercises that encouraged active participation from students. The speaker also addressed common mistakes made during interviews and offered strategies to overcome nervousness and build self-confidence.

The programme proved to be highly beneficial and motivating for the final-year students. It significantly contributed to their personal development and readiness for campus placements and future professional endeavours.

Expert talk on Recent Trends in Mechanical Engineering

An expert talk on "Recent Trends in Mechanical Engineering" was organized by the Department of Mechanical Engineering on 13th March 2024. The session was delivered by Dr. Parmeswar Dash, Associate Professor of NIST University, who served as the resource person for the seminar.

Dr. Dash highlighted emerging advancements in areas such as automation, robotics, additive manufacturing, renewable energy systems, and smart manufacturing technologies. He emphasized the growing importance of interdisciplinary knowledge and the need for students to stay updated with technological innovations.

The session was highly informative and interactive, with students actively participating in discussions and clarifying their doubts. The seminar broadened the students' understanding of current industry demands and future opportunities in mechanical engineering. The programme concluded with a vote of thanks, expressing gratitude to the resource person for his valuable insights.