



Sakeshwar Gramin Vikas Seva Sanstha's
Adsul's Technical Campus,
Ahmednagar
Department of Mechanical Engineering



Shri Aniruddha Adsul
Chairman



Dr. P.M. Patil
Principal



Mr. Jaware A. R.
Head of Department



Vision of Institute

To be a most preferred Rural Technical Campus in the region by creating competent multifaceted Engineers and Professionals ready to serve the industry and society at large.

Mission of Institute

To establish state-of-the-art facilities and create a conducive environment for transforming the rural minds into competent, skilled, professional, researchers, technically sound, innovative aptitude, and ethics through value-based education to develop the nation for global competitiveness.

Objectives of Institute

- To provide quality education with futuristic trends in engineering and technology
- To ensure continual improvement in quality management system
- To impart innovative teaching and learning

Vision of Department

To be a premier department in Mechanical engineering to serve the need of industry and society

Mission of Department

M1: To provide state-of-the-art facilities to impart quality education.

M2: To undertake various value-added and add-on courses to make students technically sound and thorough professionals.

M3: To collaborate with the industries and strive to instil the research and problem-solving attitude amongst students and faculty.

M4: To inculcate high moral, ethical values, and spirit of national pride amongst students and faculty.

Program Educational Objectives (PEOs)

PEO1: To prepare Mechanical engineering graduate with standing knowledge of Mathematics, Science, Engineering, Technology, Management, Humanities and various other interdisciplinary subjects for successful career.

PEO2: To equip students with modern tools, technology and advance soft wares for deliberating Engineering solutions.

PEO3: To equip students with broad based knowledge to support the service industry, economic development and to address social and engineering challenges of nation.

PEO4: To inculcate student with leadership skill with high level of integrity and ethical value for team building and team work.

Program Outcomes (POs)

PO-1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering Programs.

PO-2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO-3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO-4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO-5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO-6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO-7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO-8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO-9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO-10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO-11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO-12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

PSO1: An ability to design solution for thermal, hydraulic systems, design components and production processes that meet the specified needs with team work and management skill for safety, societal and environmental aspects through lifelong learning..

PSO2: An ability to use modeling and analysis software such as NX, Creo, CATIA, Ansys etc. technologies for obtaining quick, economical and accurate solution of engineering problems.

PSO3: An ability to design electromechanical and automation systems in multidisciplinary environments through better communication.

Silent features of Department:

- **Supportive learning for placement:** Placement learning is immersive and iterative. Support in the form of formative tasks and activities are crucial for student success, whilst being mindful of the need to ensure parity of student workload between modules of the same credit weighting. Placement assistance can offer students professional guidance and support to help them build successful careers. Students who might feel overburdened by the job search process might greatly benefit from placement assistance services.
- **Value added courses:** Value Added courses are career and market oriented, skill-enhancing courses that empower the students beyond their domain of study. The certificate programmers enable them to enrich their capability and enhance their employability. Value added courses are conducted for one week during the semester breaks by department faculty and external trainers.
- **Career oriented Add-On Courses:** Job-oriented courses are training and academic courses that prepare professionals for a particular career field or role. A traditional academic course may provide an overview of a certain topic or area, but a job-oriented course focuses on the knowledge and skills required for a particular job.
- **Teacher as Mentor:** The role of the Mentor Teacher is a complex blend of modeling, coaching, instructing, collaborating, and encouraging as candidates build competency in program standards. Mentor Teachers are expected to support candidates in developing the skills and knowledge to meet these standards.
- **Report writing and Paper Presentation:** A report is a specific form of writing, written concisely and clearly and typically organized around identifying and examining issues, events, or findings from a research investigation. Reports often involve investigating and analyzing a problem and coming up with a solution.
- **Professional Development for Industrial Engagement:** There are three types of employee engagement: cognitive, emotional, and physical. When employees are cognitively engaged, they're committed to their job, when they're physically engaged, they're invested in their work, and when they're emotionally engaged, they have an emotional connection to their work.
- **Personality Development and Soft Skill Training:** Personality Development teaches us how to communicate and display ourselves as having caring skills. It also emphasizes personal management, grooming, health, and nutrition, as well as soft skills. This course educates students on the numerous aspects of self-development. Soft skills comprise pleasant and appealing personality traits as self-confidence, positive attitude, emotional intelligence, social grace, flexibility, friendliness and effective communication skills.

"Beti Bachao Beti Padhao" Abhiyan

Department of Mechanical Engineering, Adsul's Technical Campus, Ahmednagar Arranged the campaign 'Beti Bachao Beti Padhao' on 24 April 2024 implemented in Chas village. The Overall Goal of the Beti Bachao, Beti Padhao (BBBP) Scheme is to celebrate the Girl Child & Enable her Education. The objectives of the Scheme are prevent gender biased sex selective



elimination, Ensure survival & protection of the girl child & Ensure education of the girl child.

At the end, principal sir addressed and thanked the chief guest (Chas Village), Dean (Student Activity of ATC Chas) as well as teachers and students for coming and participating in this helpful activity, giving their precious time. Overall, this was an excellent and glorious event for all.

दैनिक लोक आवाज
आवाज आपल्या मनातला..

'आडसूल'तर्फे 'बेटी बचाव बेटी पढ़ाव' अभियान

अहमदनगर : आडसूल महाविद्यालयातर्फे सामाजिक जाणिवेची जागृताय अनेक सामाजिक उपक्रम आसपासच्या गावांमध्ये घेतले जातात. त्याचाच एक भाग म्हणून चस (ता.नगर) येथे 'बेटी बचाव बेटी पढ़ाव' हे अभियान राबविण्यात आले.

डॉ. प्रदीप एम. पाटील यांच्या मार्गदर्शनाखाली कनिष्ठमधील विद्यार्थी विभागाचे दिन प्रा. स्नेहिल गायकवाड यांनी हे अभियान आयोजित केले होते. या कार्यक्रमाच्या वेळी चस गावचे सरपंच, उपसरपंच, विविध कार्यकारी मंडळाचे चेअरमन, व्हाईस चेअरमन, ग्रामस्थ, महाविद्यालयातील प्रा. सचिन भोंडवे, प्रा. उर्मिला नागरगीरे, प्रा. एम.एस. जाधर, प्रा. पवार जे.एस., प्रा. भावद व्ही. आर., प्रा. पोट एम. एस., प्रा. ओझा डी.डी., प्रा. वामन पी. एस., प्रा. जगताप पी. व्ही. आणि २१७ विद्यार्थी व विद्यार्थिनी उपस्थित होते.

प्राचार्य डॉ. पाटील यांनी मार्गदर्शन करत आसतांना यांमितीने की संकुचित विचारसरणीचे लोक मुली आणि मुलांमध्ये वेदभाव करतात. त्यांना वाटते की मुले आयुष्यभर सेवा करतील आणि मुली पक्की संपत्ती आहेत. त्यांना शिकवून काय फायदा होणार नाही. परंतु आजच्या युगात सधिले तर प्रत्येक क्षेत्रात मुली बाजी मारत आहेत. त्याच आज पालकांना बांगल्ला प्रकारे सांगायला आहेत. त्यामुळे आपण मुले व मुली मध्ये करू न करता दोघांनाही बांगल्ला प्रकारचे शिक्षण आणि संस्कार दिले पाहिजेत.

या उपक्रमाने संस्थेचे अध्यक्ष अनिरुद्ध माणिक आडसूल, उपाध्यक्ष विश्वनाथ माणिक आडसूल, सैफेदरी लीनाताई आडसूल, सचिनदार परमेश्वर आडसूल, संचालक कृष्णा आडसूल, पॉलिटेक्निकचे प्राचार्य रमेश गडाव, इलेक्ट्रॉनिक विभाग प्रमुख डॉ. दिनेश अडोकर, संगणक विभाग प्रमुख डॉ. हेमंत जाधव, सिविल विभाग प्रमुख प्रा. अनिल डोले, एम.बी.ए. विभाग प्रमुख डॉ. निरवजित कोसळे, मेकॅनिकल विभाग प्रमुख प्रा. अभिजीत जाधर आणि प्रथम वर्ष विभाग प्रमुख प्रा. अमोल घुले यांनी कौतुक केले आणि पुढील चाट्यालीस शुभेच्छा दिल्या.

आडसूल Technical Campus
Beti Bachao Beti Padhao ABHIYAN

Photo Gallery



Tree Plantation



On 13th April 2024, Adsul's Technical Campus organized a Tree Plantation Programme at Chas village with the active participation of students and faculty members. As part of this environmental awareness initiative, approximately 90 trees were planted in and around the selected area of the village. The main objective of the programme was to create awareness among students about environmental protection, climate change, pollution control, and the importance of trees in maintaining ecological balance. The activity provided students with an opportunity to understand that environmental conservation is not only a responsibility of government organizations but also a collective responsibility of every individual and educational institution.

During the programme, students actively participated in planting the saplings and learned about the importance of selecting suitable locations, proper plantation methods, regular watering, and long-term care of trees. The activity also encouraged students to take responsibility for the growth and survival of the planted saplings. Trees play a vital role in maintaining a healthy environment by absorbing carbon dioxide, releasing oxygen, reducing air pollution, conserving soil, supporting biodiversity, and helping regulate temperature. Tree plantation also contributes to mitigating the effects of climate change and global warming by increasing green cover and enhancing carbon sequestration.

The programme successfully created a sense of environmental responsibility and social awareness among students. It motivated them to adopt eco-friendly practices and encouraged the local community to actively participate in environmental conservation. The plantation of 90 young trees was therefore not merely a one-day activity but an important step towards developing a greener, cleaner, and healthier environment. The initiative reflected the institution's commitment to environmental sustainability and its efforts to nurture responsible citizens who understand the importance of protecting nature for present and future generations.

Student Articles

Finite Element Analysis



Finite Element Analysis (FEA) is a powerful computational tool used to simulate and predict how physical objects behave under various conditions, such as stress, heat, fluid flow, and vibration. It is an essential part of modern engineering design and analysis, allowing engineers to test and optimize components before manufacturing. By dividing a complex object into smaller, simpler parts (known as finite elements), FEA enables the solution of complex equations that describe the physical behavior of materials and structures.

At the core of FEA is the concept of discretization. The first step in performing an FEA is to break down a physical structure into a mesh of smaller, manageable elements. These elements are interconnected at points called nodes. The more elements used in the mesh, the higher the accuracy of the analysis, though this comes at the cost of greater computational effort.

Each element is governed by its own set of equations based on the material properties, boundary conditions, and forces acting upon it. These equations are solved simultaneously across all elements to determine the global behavior of the entire structure. The results of the analysis provide detailed insights into the system's performance, such as stress distribution, deformation, temperature variation, and fluid flow patterns.

- Girm Jay
(TE (Mech))

The Future of Autonomous Vehicles (AVs)



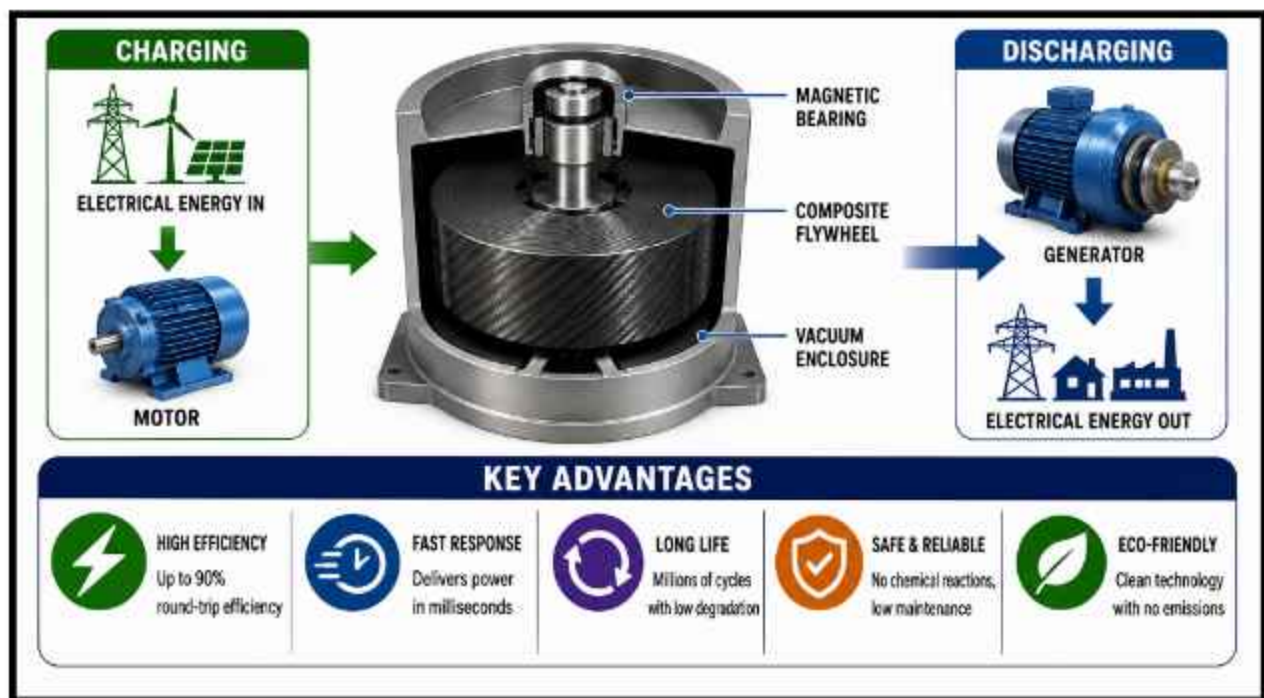
The future of autonomous vehicles (AVs) is one of the most exciting and transformative areas of technological development in the modern world. Autonomous vehicles, also known as self-driving cars, are vehicles capable of sensing their environment and operating without human intervention. With advancements in artificial intelligence (AI), machine learning, computer vision, and sensor technology, the development of AVs is progressing rapidly. The advent of autonomous driving promises to reshape transportation systems, reduce accidents, increase efficiency, and revolutionize industries ranging from mobility services to logistics and public transportation.

An autonomous vehicle is a car or truck that can drive itself without human intervention, relying on an array of sensors, cameras, radar, and AI algorithms to navigate and make decisions. These vehicles use advanced technologies such as LiDAR (Light Detection and Ranging), computer vision, and machine learning to interpret their surroundings, plan their routes, and execute safe driving maneuvers.

The future of AVs holds immense promise in various sectors. Autonomous vehicles, with their advanced sensors and AI, can dramatically reduce the likelihood of accidents caused by distractions, fatigue, or impaired driving. The vehicles can also optimize routes, minimizing fuel consumption and travel time, resulting in more efficient transportation networks. Self-driving cars could offer mobility solutions for people who are unable to drive due to age, disability, or other factors. For elderly individuals or those with disabilities, AVs can also be programmed to drive more efficiently, further reducing fuel consumption and contributing to a greener future.

- **Bhole Sanket Dhananjay**
SE (MECH)

Flywheel Energy Storage: Mechanical Batteries



A flywheel energy-storage system stores energy as rotational kinetic energy. An electrically driven motor accelerates a rotor, and when energy is needed, the rotating system drives a generator to return electrical energy. The stored energy depends on the rotor's mass moment of inertia and rotational speed. Increasing speed can greatly increase stored energy, which is why high-performance flywheels require careful rotor design and balancing. A modern system may use a high-strength composite rotor, magnetic bearings and a vacuum enclosure. Magnetic bearings reduce mechanical contact and therefore lower friction. A vacuum environment reduces aerodynamic drag. Mechanical engineering challenges include rotor stress, fatigue, critical speeds, vibration, bearing design, containment and thermal management. As rotational speed increases, centrifugal stress becomes a dominant design constraint. The rotor must remain structurally stable even under overspeed conditions.

Flywheels can respond rapidly because energy conversion does not depend on slow chemical reactions. This makes them suitable for applications requiring frequent charge-discharge cycles, short-duration power support, regenerative braking and grid stabilization. Compared with batteries, flywheels have different advantages and limitations. They can offer long cycle life and rapid power delivery, but stored energy can be lost gradually due to system losses and the system may require substantial mechanical protection. Concepts from dynamics, strength of materials, vibration and machine design directly determine performance. Future systems may use improved composite materials, magnetic-bearing technology and advanced power electronics. The design challenge is to maximize stored energy while maintaining safety and reliability. For mechanical engineering students, a flywheel can be viewed as a mechanical battery. It demonstrates that energy storage is not exclusively a chemical problem and that rotational mechanics can provide a powerful method of storing and releasing energy.

- Chavan Pawan

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We acknowledge the efforts of our editorial team, comprising faculty and students, for their valuable contributions in this publication:

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