# ARAVALI

COLLEGE OF ENGINEERING & MANAGEMENT

SESSION 2025

# CREATING ACHIEVERS

*Showcasing Talent, Celebrating Success.*

*Where Ideas Rise, Talent Shines,*
*and Your Future Begins.*


*The Annual Reflection of Aravali Excellence.*

## COLLEGE MAGAZINE

# ABOUT ARAVALI

Established in 2008, Aravali College of Engineering and Management (ACEM) is committed to providing quality technical and managerial education while fostering innovation, research, and holistic development among students. With a vision to become one of the leading institutions in the country, the college focuses on academic excellence, skill development, and industry-oriented learning to prepare students for a dynamic global environment.

The institution caters to students from the Delhi–NCR region and across the country, equipping them with the knowledge, confidence, and professional competencies required to succeed in their chosen careers. At ACEM, learning goes beyond classrooms, emphasizing research, creativity, leadership, and personality development.

The college is promoted by visionary educationist Dhan Singh Bhadana, Chairman of Aravali Eduworld, an educational group dedicated to delivering quality education. The group includes institutions such as Aravali International School, Aravali College of Engineering and Management, Aravali Institute of Competitive Studies, and Aravali College of Advanced Studies in Education.

ACEM also emphasizes inclusive education by supporting students from economically weaker backgrounds through scholarships and awards. With a strong focus on diversity, integrity, and responsibility, the institution strives to transform students into confident, skilled, and socially responsible professionals who contribute positively to society.

MEET

# ARAVALI'S FAMILY

# VICE-CHAIRPERSON'S MESSAGE

**“Transforming Potential into Performance: Cultivating the Next Generation of Global Achievers."**

It is a matter of profound professional gratification to present the current edition of the Aravali College of Engineering and Management (ACEM) Annual Magazine. This publication serves as a comprehensive chronicle of Aravali College of Engineering and Management’s (ACEM) unwavering commitment to pedagogical excellence and technological innovation over the past academic years.

Over the years, Aravali College has consistently evolved; embracing innovation, academic rigor, and industry-oriented learning. We have transitioned from being a center of academic instruction to a dynamic ecosystem of research-driven learning. Our progress this year is not merely quantitative but qualitative, reflected in our strengthened industry-academia interface, high-impact research contributions, and a placement record that underscores the competency of our graduates. Our students have demonstrated exceptional talent and determination, bringing laurels to the institution at various platforms, while our faculty members continue to contribute through their dedication, research, and mentorship.

We have strengthened our academic ecosystem by integrating modern teaching methodologies, enhancing industry collaborations, and promoting experiential learning opportunities such as internships, hackathons, and live projects. Initiatives like skill development programs, innovation labs, and entrepreneurship support have further empowered our students to become future-ready professionals.

This magazine encapsulates the vibrancy of our campus life and the intellectual caliber of our students. It stands as a testament to the collective synergy of our visionary faculty and our ambitious student body, who continue to earn accolades on national platforms.

I extend my heartfelt appreciation to the editorial board for their meticulous efforts in curating this edition. I congratulate all the students and faculty as their work beautifully mirrors the ethos of ACEM—striving for precision, excellence, and perpetual growth.

As we move forward, let us remain steadfast in our pursuit of technical mastery and ethical leadership. Together, we shall continue to set new benchmarks in engineering education and contribute meaningfully to the nation’s technological landscape.

**MR. MEHTAB SINGH BHADANA**

# FROM THE DESK OF DIRECTOR

**PROF. (DR.) ASHISH SOTI**

Dear Students, Faculty Members, and Esteemed Readers.

It gives me immense pleasure to write a message for the newsletter of Aravali College of Engineering and Management. The Magazine is more than a collection of articles and activities; it is a reflection of our institution's vision, creativity, and continuous journey toward excellence.

In today's dynamic world, education is not limited to earning degrees; it involves developing skills, innovation, leadership, and strong values. India is ranked 8th in the Global Innovation Index 2025. This ranking is continuously improving because the ecosystem is consistently improving. At Aravali, we are committed to being a leader in the educational system with an indigenous, innovative approach to our teaching and skill developmentprocesses. The Aravali is now an approved center of the National Cadet Corps (NCC) and Unnat Bharat Abhiyan.

As an institute, we are not only committed to educating professionals but also contributing to the development of the nation with our research, innovative projects, and industrial support programs. The success stories of many of our initiatives will be shared continuously through this Newsletter. All students, faculty, and staff members are requested to keep the success stories shared on this platform.

Our students consistently demonstrate academic competence, social responsibility, ethical awareness, and confidence in facing real-world challenges. This Newsletter beautifully captures holistic growth by showcasing academic achievements, research initiatives, cultural expressions, and socially relevant activities.

I wish to encourage our students to use this platform to express their ideas freely, think critically, innovate fearlessly, and learn from every experience— both successes and setbacks. The dedication of our faculty and enthusiasm of our students form the backbone of our institution's success.

I sincerely appreciate the efforts of the editorial team, contributors, and all those who worked behind the scenes to bring this Newsletter to fruition. I am confident that this edition will inspire readers, foster connectivity, and motivate everyone to strive for higher goals.

# CHIEF EDITOR'S Message

**DR. POONAM RANI**

(HOD, MANAGEMENT STUDIES)

It is a pleasure to present the latest edition of the Aravali College Magazine, which captures the essence of our institution through its yearly highlights, achievements, and creative expressions. This edition proudly celebrates the accomplishments of our winners across academic, cultural, and sports domains, reflecting their dedication and excellence.

The magazine also features insightful blogs, innovative ideas, and engaging articles contributed by students and faculty, along with glimpses of vibrant campus life and memorable events throughout the year. It serves as a platform to encourage creativity, knowledge sharing, and holistic development.

Aligned with the vision of IQAC, this publication reflects our continuous commitment to quality, innovation, and academic excellence. Heartfelt appreciation is extended to all contributors and the editorial team for their valuable efforts.

Wishing all readers an inspiring and enriching experience.

# CO-EDITOR'S Message

**MR. SATISH KUMAR DOGAR**

CHIEF LIBRARIAN

With great enthusiasm, the latest edition of the Aravali College Magazine is presented, capturing the spirit, achievements, and creativity that define our institution. This publication is not just a record of events, but a celebration of the dedication, innovation, and talent demonstrated by our students and faculty throughout the year.

The magazine highlights key milestones, accomplishments of achievers, and success stories across academics, sports, and cultural activities. Each page offers glimpses of memorable events and experiences that have shaped this academic year, showcasing the vibrant and dynamic environment of the college.

Sincere appreciation is extended to all contributors, reviewers, and the editorial team for their commitment and hard work in bringing this publication to life.

Wishing all readers a meaningful and engaging experience.

# Members of Publication (Magazine) Committee

**Ms. Parul Dhingra**
**Assistant Professor, CSE**

**Ms. Sapna**
**Assistant Professor, ECE**

**Ms. Madhur Bansal**
**Assistant Professor, ASH**

**Ms. Jaspreet Kaur**
**Assistant Professor, CSE**

**Mr. Jitender Tanwar**
**Assistant Professor, ME**

**Mr. Amit Kumar**
**Assistant Professor, CE**

# FROM THE MEMOIR OF FACULTY

MS. SAPNA VERMA, ECE

## ECE IN ARTIFICIAL INTELLIGENCE: RESEARCH PERSPECTIVES AND EMERGING DIRECTIONS

Artificial Intelligence (AI) has evolved from a purely algorithmic discipline into a multidisciplinary research domain that tightly integrates hardware, communication systems, and signal processing. At the core of this transformation lies Electronics and Communication Engineering (ECE), which provides the physical infrastructure and computational platforms necessary to translate intelligent algorithms into real-world systems. Current research in ECE-AI integration focuses on enabling efficient, scalable, and reliable intelligent systems capable of operating in dynamic environments.

One of the primary research areas at the intersection of ECE and AI is intelligent sensing and data acquisition. Advanced sensor technologies combined with AI-based perception models are enabling high-resolution and context-aware data collection. Research efforts are focused on developing low-power, high-precision sensors and sensor fusion techniques that integrate data from multiple modalities such as vision, audio, biomedical signals, and radar. These advancements are critical for applications in autonomous systems, remote healthcare monitoring, and environmental sensing.

Signal processing remains a foundational research pillar in ECE-driven AI systems. Modern research emphasizes the integration of classical signal processing with data-driven learning models. Techniques such as adaptive filtering, sparse signal representation, and compressed sensing are increasingly being combined with deep learning architectures to improve robustness and interpretability. This hybrid approach is particularly significant in speech processing, wireless communication, and medical imaging, where reliability and accuracy are paramount.

Embedded AI and edge intelligence represent another major research frontier. Running complex AI models on resource-constrained hardware poses significant challenges related to power consumption, latency, and memory limitations. Research in this domain focuses on model compression, quantization, and hardware-aware neural network design. ECE researchers play a crucial role in hardware–software co-optimization, enabling real-time AI inference on microcontrollers, field-programmable gate arrays (FPGAs), and system-on-chip platforms.

Communication systems research has also been transformed by AI integration. Machine learning techniques are increasingly being applied to optimize wireless networks, channel estimation, spectrum allocation, and interference management. Conversely, communication-efficient AI models are being developed to reduce data transmission overhead in distributed and federated learning systems. The convergence of AI with next-generation communication technologies, including 5G and beyond, is a key research area supporting applications such as connected autonomous vehicles and large-scale IoT networks.

Hardware acceleration for AI is a rapidly expanding research domain within ECE. The growing computational demands of deep learning have driven the development of specialized architectures such as neural processing units and AI accelerators. Research efforts focus on improving energy efficiency, parallelism, and scalability while maintaining computational accuracy. Emerging technologies such as neuromorphic computing and in-memory computing are also being explored to overcome the limitations of traditional von Neumann architectures.

From an application-driven research perspective, the synergy between ECE and AI is enabling breakthroughs across multiple sectors. In healthcare, intelligent diagnostic systems and wearable medical devices are advancing personalized medicine. In smart infrastructure, AI-driven communication and control systems support efficient energy management and urban planning. In industrial automation, intelligent robotics and predictive maintenance systems are reshaping manufacturing processes. These applications not only validate theoretical research but also introduce new challenges that drive further innovation.

In conclusion, the integration of Electronics and Communication Engineering with Artificial Intelligence represents a critical research paradigm for next-generation intelligent systems. ECE provides the essential hardware, signal processing frameworks, and communication infrastructures that enable AI to interact with the physical world. As research continues to advance toward more efficient, autonomous, and adaptive systems, the role of ECE in AI will become increasingly significant. This convergence is expected to shape future technologies and open new avenues for interdisciplinary research and innovation.

MS. SHWETA, ECE

## FROM DESIGN TO PRODUCTION: THE ELECTRONICS MANUFACTURING JOURNEY

Every electronic product we use today—whether it is a smartphone, a smart wearable device, an industrial controller, or a simple power adapter—goes through a detailed and carefully managed journey before reaching our hands. The process begins with an idea, often obsessed by a need to solve a real-world problem or improve present technology. At this early stage, product managers and system engineers define the purpose of the product, identify target users, and convert market needs into clear technical specifications. This foundation is critical, as it shapes the overall architecture, functionality, cost targets, and performance expectations of the final device.

Once the concept is clearly defined, the design phase begins. Electronics engineers create detailed circuit schematics and select appropriate components such as microcontrollers, sensors, integrated circuits, and power modules. These schematics are then converted into printed circuit board (PCB) layouts, where careful attention is given to signal integrity, power distribution, thermal management, and electromagnetic compatibility. At the same time, embedded systems engineers develop firmware that enables the hardware to function as intended, while software developers may design user interfaces, mobile applications, or cloud connectivity features. This phase transforms theoretical concepts into practical designs ready for testing.

After the design is completed, a prototype is built. Prototyping serves as a reality check, allowing engineers to validate whether the product performs as expected in real-world conditions. The prototype undergoes functional testing, electrical performance evaluation, and sometimes environmental and stress testing. It is common for engineers to identify areas for improvement during this stage, leading to revisions and refinements. Iteration is a natural and essential part of product development, ensuring reliability and performance before mass production begins.

Before moving to large-scale manufacturing, the design must pass through a crucial stage known as Design for Manufacturing (DFM). A product that works perfectly in a laboratory may not be easy or cost-effective to produce in high volumes. Manufacturing and process engineers analyze the design to ensure that components are readily available, assembly processes are efficient, and production yields remain high. Small modifications at this stage can significantly reduce costs and improve quality consistency. Meanwhile, procurement and supply chain teams work to source reliable vendors, negotiate pricing, and ensure timely delivery of components, which is particularly important in today's globally interconnected electronics industry.

Once all preparations are complete, the production phase begins. PCB assembly typically involves solder paste printing, automated component placement using pick-and-place machines, and reflow soldering. Automated Optical Inspection (AOI) systems and quality control checks ensure that every board meets design standards. After PCB assembly, final product integration takes place, where boards are installed into enclosures and combined with displays, connectors, batteries, or other modules. Production engineers and quality assurance teams monitor each step to maintain uniformity and minimize defects.

Testing does not end after assembly. Finished products undergo rigorous quality assurance procedures to verify functionality, reliability, and compliance with safety and regulatory standards. Tests may include thermal cycling, electrical safety checks, and performance validation under different operating conditions. Only after meeting all required standards are products approved for packaging and distribution.

Even after launch, the lifecycle of an electronic product continues. Field engineers analyze performance data and address any issues reported by customers. Feedback from real-world usage often leads to firmware updates, design improvements, and next-generation product enhancements. In this way, electronics manufacturing is not a linear process but a continuous cycle of innovation and refinement.

In conclusion, the journey from design to production is a collaborative effort involving system engineers, hardware designers, embedded developers, manufacturing specialists, supply chain professionals, and quality assurance teams. Each stage plays a vital role in ensuring that the final product is reliable, efficient, and ready to meet user expectations. The next time we use an electronic device, it is worth remembering that behind its compact design lies months—or even years—of coordinated engineering expertise and dedicated teamwork.

MS. MONIKA SHARMA, ASH

## GET BEHIND PEOPLE'S EYEBALLS

One of the deepest of all human hunger is the need to be understood, cherished and honoured. Yet, in the fast-paced days we live in, too many people believe that listening involves nothing more than waiting for the other person to stop talking. And to make matters worse, while that person is speaking, we are all too often using that time to formulate our own response rather than empathising with the point being made.

Taking the time to truly understand another's point of view shows that you value what he has to say and care about him as a person. When you start “getting behind the eyeballs” of the person who is speaking and try to see the world from his perspective, you will connect with him deeply and build high trust relationships that last.

We have two ears and one mouth for a reason: to listen twice as much as we speak. And having the courtesy to be a better listener has another advantage: since you are not doing all the talking, you are doing all the learning, gaining access to information you would have missed had you been engaged in the usual monologue.

Few practical tips to become better at the art of listening:

- If you are speaking and the person you are having a conversation with has not said something within the past 60 seconds, there is a good chance you have lost him/her and it's time to stop talking so much.
- Resist the temptation to interrupt. Catch yourself just before you do so and pay more attention to the content of what the other person is saying to you.
- If appropriate (i.e., in a business setting), take notes. Few things more readily show the other person in a conversation that you genuinely wish to learn from what he or she has to say than pulling out a notepad and making notes while he/she speaks.

After the other person makes his/her point, rather than immediately responding with your opinion, reflect on what you have just heard. Saying something such as “Just to make sure I understand you, are you saying……?” and doing so with complete sincerity will bring you much closer to the people you interact with every day of your life.

(Inspired from Robin Sharma)

MS. GARIMA RAJPUT, ASH

# WATER AND LITERATURE

Water has been used symbolically in literature throughout history. Symbol of Reflection, Symbol of Moving On, Symbol of Re-Incarnation, and Symbol of Health, since fresh water represents excellent health while stale water represents negative health.

Hindu Mythology A.K.A Sanatana Dharma believes that we, people, evolved from fish, and that water, like fish, is necessary or required for existence. Similarly, Christians believe that by providing water with the power to wash or cleanse souls, their sins may be removed. This is why Christians choose to get baptized.

Different authors use water as a metaphor in different ways. Alfred Lord Tennyson calls water the "Flow of life" in his poem "Lady Shalott," in order to speak about movement and interaction as people go about their daily lives and the stagnancy and stillness of the lady in her lonely water fort.

In a similar vein, Wordsworth claims in his Lyrical Ballads that Water flows, Like sea and has two unique patterns of Imagery, One fittingly as a location of peril and the other "the voice" of "everlasting existence".

T. S Elliot like Wordsworth metaphorizes water as a symbol of Life and death. In his poem The Wasteland he says They(Humans) have no faith in Brahma /God and Spiritual values. Now, they need water i.e. “Spiritual Peace”. He uses water as a symbol of “shāntih”.

According to Hand Biedermann, a German author, "Water is the Fundamental Symbol of all the Energy of the Unconscious - an Energy that can be Dangerous when it overflows its Proper Limits."

William Shakespeare used several symbols to represent water in his writings. In The Tempest, water represents the strength that might result in loss and destruction or that can represent personal achievement due to being steady and tranquil. In Hamlet, it denotes reproductive potential, Feminine sensuality, and woman's fluidity as opposed to men's avidity. In Romeo and Juliet, the connection between Romeo and Juliet is symbolised by water, which can occasionally become tainted or unclean. This can also mean that their

relationship will experience some unpleasant or shady things and suffer as a result. Water is a metaphor for truth, love, and the ability to see things clearly. Water in the play Macbeth serves as a reminder of the concept that one cannot escape guilt. Lady Macbeth makes repeated attempts to persuade both Macbeth and herself that one may absolve themselves of guilt by "washing" their hands with water to erase the blood or guilt.

Similarly, in Fyodor Dostoevsky's classic Crime and Punishment, water embodies the larger concepts of life and redemption. In a metaphorical way, water supports individuals who are doing good deeds while being rejected by evil men.

Like water is portrayed in many ways in literature, which we all agree is a reflection of society, so too is reality. Every religiously significant location has a pond or other body of water on its grounds to establish the value of water. Water is vital to life, thus we must avoid squandering it. We ought to think of water as an expensive luxury that not everyone can afford.

DR. GUNJAN, KATHURIA

**Kites Rise Against the Wind**

The terrace of the Humanities wedge was the only place where the air felt thin enough to breathe. For Aryan, the rest of campus felt like a pressure cooker—a dense fog of CGPA, internship rejections, and the silent, heavy expectations of a family.

In his final year of Engineering, Aryan was failing. Not just academically, but socially. While his peers spent their Friday night networking or celebrating high marks, Aryan sat in the back of the library, staring at blueprints that looked like claptrap. He felt like a kite with a snapped string, drifting aimlessly while everyone else soared.

One evening, he found Professor Kapoor-a man known more for his frankness than his empathy flying a simple diamond kite on the tactical grounds.

You're holding the string too tight, Aryan, Kapoor said, without looking back. Aryan hadn't even realized he'd been spotted.

I'm not flying a kite, Sir. I'm just... walking.

You're walking like a man carrying the weight of the entire building, Kapoor countered, finally reeling in the line. You think the wind is your enemy, don't you? The academic

pressure, the family legacy, and the fear of being less than, you think those are the things holding you down.

Aryan looked at his feet. Aren't they?

Look at the kite, Kapoor pointed upward. It doesn't rise with the wind. It rises against it. Without that resistance, without that tension pushing back, the kite is just a piece of paper on the grass. The wind isn't trying to knock you down; it’s providing the lift you need to climb.

That night, Aryan didn't open his textbooks with the usual fear. He stopped viewing his failures as a dead end and started seeing them as the resistance necessary for growth. He stopped trying to memorize and started asking why. He sought out the resistance of difficult questions. He stopped pretending to enjoy the high-status clubs and joined a small sketching circle where he actually felt at home. He realized that the social pressure to be someone was just air moving in a different direction. He didn't have to fly in the direction the crowd was blowing; he just had to use his energy to find his own height.

By the end of the semester, Aryan wasn't at the top of the list, but he was finally off the probation list. More importantly, his works had a new soul—a structural integrity born from understanding how people must stand firm against the forces trying to push them over. He realized that Professor Kapoor was right. The world will always provide the wind. Your only job is to hold the string, plant your feet, and let the pressure lift you higher.

Moral- A kite needs the wind to oppose it so that it can soar. In the same way, the obstacles in our lives are not there to stop us, but to provide the very lift we need to reach new heights.

MR. DEEPAK, CE

**UNDERSTANDING INDIA’S NEW EARTHQUAKE SAFETY CODE**

(IS 1893:2016 vs IS 1893:2025)

Earthquakes can cause serious damage to buildings and loss of life. Since India lies in an earthquake-prone region, it is important to design buildings that can resist earthquake forces. For this purpose, the Bureau of Indian Standards (BIS) publishes the IS 1893 code,

which provides rules for earthquake-resistant design of structures in India. Recently, the code was updated from IS 1893:2016 to IS 1893:2025, bringing many important improvements.

The earlier version IS 1893:2016, divided India into four seismic zones (Zone II to Zone V) based on earthquake risk. Each zone was assigned a fixed value to calculate earthquake forces. The design approach was simple and mainly based on past earthquake data. This code worked well for small and medium-height buildings but was less accurate for tall buildings and complex structures.

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**IS 1893 :Forced Based Design vs Performance based seismic Design (2016 vs 2025)**

| | IS1893:2016 | IS::1893:2025 |
|---|---|---|
| Design Philoshpy | Forced Based Design | perfrmance oriented |
| Primarily Objective | Prevent Collapse | provide safety & damage Control |
| Building Performance Level | Not Explicity defined | Clearly reconizes performance expectation |
| Structural Configuration | less emphasis configuration | Configuration control is Critical |
| Analysis Methods | Equivalent static method | Creater emphasis on response spectrum & Time history |
| Material & Ductility Demand | Implict ductilty assumption | Explict focus on ductility & energy dissipation |
| Damage Consideration | Damage acceptable if not Collapse | Damage must be predictable & repairable |
| Life Cycle Cost | High repair Cost | reduced life cycle cost |
| Service Life | not explicity addressed | Strongly improved service life & resilience |

**Image:-Comparison between IS: 1893:2016 & IS: 1893:2025**

The new IS 1893:2025 introduces a more advanced and realistic method. It uses a probabilistic approach, which means it considers how often earthquakes of different strengths may occur in the future. A major change is the addition of Seismic Zone VI, which represents areas with very high earthquake risk, especially in the Himalayan and north-eastern regions.Another improvement in IS 1893:2025 is the updated response spectrum, which better represents the behavior of modern high-rise buildings. The code is also divided into different parts, making it easier to understand and apply. More attention is given to building shape, irregular structures, and advanced analysis methods to improve safety.

At final , IS 1893:2025 is a big step forward in making buildings safer in India. Although it may slightly increase construction cost, it greatly improves safety and helps protect lives during earthquakes. This new code prepares India for a safer and more resilient future.

MR. AMIT KUMAR, CE

# INDIA PAVES THE WAY WITH ECO-BITUMEN: TURNING FARM WASTE INTO GREEN HIGHWAYS

In a landmark step toward sustainable infrastructure, India has emerged as the world's first country to commercially produce bio-bitumen from agricultural waste. Announced in January 2026, this breakthrough innovation transforms rice straw traditionally a major contributor to air pollution into a valuable material for building eco-friendly roads.
This development not only signals a technological leap in road construction but also reflects India's growing commitment to a circular economy, climate action, and energy self-reliance.

**What Is Eco-Bitumen?**
Conventional bitumen, a petroleum by-product, is widely used as a binding material in road construction. However, it is carbon-intensive and heavily import-dependent. Eco-bitumen (or bio-bitumen) offers a greener alternative.

Developed by the CSIR-Central Road Research Institute (CSIR-CRRI) in collaboration with CSIR-Indian Institute of Petroleum (CSIR-IIP), eco-bitumen is produced using agricultural residue such as rice straw through a controlled pyrolysis process. This process converts biomass into a binder suitable for road construction.

**Proven Performance on Indian Roads**
One of the biggest challenges with sustainable materials is durability. Eco-bitumen has successfully cleared this test.

- Field-tested for 1.5 to 2 years
- Evaluated under real and harsh weather conditions
- Demonstrated performance comparable to, and in some cases better than, conventional imported bitumen

These trials confirm that sustainability does not come at the cost of strength or longevity.

**Environmental and Social Impact**

The benefits of eco-bitumen extend far beyond road construction:

- 20–30% reduction in fossil-fuel-based bitumen usage
- Significant cut in carbon emissions
- Productive use of rice stubble, helping combat stubble burning and air pollution
- Supports national initiatives such as “Waste to Wealth” and “Green Highways”

By converting harmful farm residue into value-added material, the innovation directly addresses one of North India’s most persistent environmental challenges.

**Economic Advantages and Energy Security**

India currently spends an estimated ₹30,000 crore annually on importing conventional bitumen. Large-scale adoption of eco-bitumen can:

- Reduce import dependency
- Strengthen domestic supply chains
- Create new revenue streams for farmers
- Encourage rural-industrial integration

The initiative is supported by industry players such as Praj Industries, ensuring scalability and commercial viability.

**A Step toward a Circular Economy**

Eco-bitumen exemplifies how waste can become wealth. Agricultural residue, once considered an environmental liability, is now a strategic resource powering sustainable infrastructure.

This innovation aligns perfectly with India’s broader goals:

- Climate resilience
- Sustainable infrastructure development
- Net-zero ambitions
- Self-reliant technology ecosystems.

**Conclusion**

India’s eco-bitumen initiative is more than a technological achievement—it is a blueprint for how developing economies can innovate responsibly. By integrating science, sustainability, and policy, India is literally building greener roads to the future.

As these bio-based highways expand across the country, they carry with them a powerful message: the path to progress can be sustainable, inclusive, and homegrown.

MR. PARVEEN, ME

**The Future of Girl Students in Mechanical Engineering:**

**Breaking Stereotypes, Building Machines**

Mechanical engineering, often regarded as the backbone of innovation and infrastructure, has historically been a male-dominated field. However, this perception is rapidly changing. Today, girl students are entering and excelling in mechanical engineering in increasing numbers, bringing fresh perspectives, resilience, and a passion to redefine the industry.

Breaking the Gender Myth

For decades, mechanical engineering was seen as a "man's domain," often due to misconceptions that it involves only heavy machinery and physical labor. In reality, the field is broad and evolving — encompassing automation, robotics, aerospace, automotive design, renewable energy, and AI integration — areas where intellectual skills and creativity matter more than brute strength.

Young women are now challenging these outdated stereotypes by pursuing mechanical engineering not just as a degree, but as a platform for innovation and impact.

- **Current Scenario**: A Promising Shift
- **Rising Enrollments**: More girls are opting for mechanical engineering across universities. Scholarships, mentorship programs, and awareness campaigns are helping bridge the gender gap.
- Government & Industry Support: Initiatives like **"Beti Bachao, Beti Padhao",** STEM campaigns, and diversity programs by companies (like Tata, GE, and Bosch) have encouraged more participation.
- **Role Models Matter**: Success stories of women like Dr. Tessy Thomas (India's 'Missile Woman'), and Kalpana Chawla (NASA astronaut with mechanical roots) inspire a new generation.

**Career Opportunities:**

Female mechanical engineers can work in a wide range of industries, including:

- Automotive Industry – Design, manufacturing, testing (companies like Tata Motors, Mahindra, Maruti, etc.)
- Aerospace – Aircraft and spacecraft design (ISRO, DRDO, HAL, Boeing, etc.)
- Manufacturing & Production – Supervising plant operations, product design.
- Energy Sector – Power plants, renewable energy (solar, wind), oil & gas.
- Robotics and Automation – Designing intelligent machines and industrial robots.
- Research & Development – Innovation in materials, design processes, energy systems
- Public Sector & Government Jobs – UPSC, Indian Railways, PSUs like BHEL, GAIL, IOCL.
- Academia – Teaching and research roles in universities and colleges.

**Higher Studies Options**

- Female students can pursue:
- M.Tech/MS in specializations like Robotics, Thermal Engineering, Mechatronics, CAD/CAM.
- MBA (for tech-management roles).
- Research (Ph.D. in mechanical or interdisciplinary fields).

**Top Recruiters Supporting Diversity**

Many companies are actively encouraging women in STEM. Some offer diversity hiring programs:

- Tata Steel's "Women of Mettle"
- L&T's "Women Engineers Program"
- GE, Cummins, Mercedes-Benz, and Bosch – with strong diversity policies

**Advantages & Growing Support**

- Scholarships: AICTE's Pragati Scholarship, SWE (Society of Women Engineers), etc.
- Support Networks: Women in Engineering groups (IEEE WIE, SWE).
- Increased Encouragement: Colleges and companies promote female inclusion in core branches.
- Skills That Give an Edge
- To stand out, female students should build:
- Proficiency in design software (AutoCAD, SolidWorks, ANSYS).
- Programming (Python, MATLAB, Arduino).
- Soft skills: Communication, leadership, problem-solving.

**Challenges Still Exist**

Despite progress, female mechanical students often face:

- Gender Bias & Stereotyping: Preconceived notions still linger among peers and faculty.
- Limited Industry Exposure: Fewer internship opportunities or role models in core sectors.
- Work-Life Balance Concerns: A perceived incompatibility with field jobs, especially in rural or plant locations.

Ms. Priya

## दर्पण

देख लिया उन चक्षु को भी जो अवलोकन में डूबे रहते थे,
ओष्ट प्रसार रहते हरदम, वो खिले अधर कुछ कहते थे,
कर पर अधर, अधर पर कर से ही तो चपल अधर ठहरते थे,
उसके करग्र लगने से कपिश गजरे तक महकते थे|

पर अब नम लोचन क्यों खुद को निहारें ...?
अधर क्यों छोड़े किसी के सहारे ...?

मैं दर्पण... सिर्फ सत्य ही दिखाऊंगा,
तुरती आँखें , खामोश लब सब सच बताऊंगा,
टक लगाकर देख मुझे , मैं कुछ नहीं छुपाऊंगा,
मूंद लोचन तू सोच कर मुझे, मैं तुझमें ही कहीं बस जाऊंगा,
बन के तेरे अन्तस का अर्श, तुझे उसका यथार्थ समझाऊंगा,
रखना मुझे तू बंद कहीं रगों में अपनी,
शंकालु अभाव से हमेशा मैं ही बचाऊंगा,
जब बुलाओगी... मैं तब तब आऊंगा|

||मैं तब तब आऊंगा ||

# FROM THE DIARY OF STUDENTS

KANISHKA, ASH

**"OVERTHINKING:-A STUDENT'S BIGGEST ENEMY".**

Overthinking is something almost every student faces. It starts with small thoughts but quickly becomes a big problem. A student may keep thinking again and again about studies, marks, exams, or what others think about them. This habit slowly takes away peace of mind.

When a student overthinks, they waste a lot of time. Instead of studying, they keep worrying about what will happen in the future. For example, a student may think, "What if I fail?" or "What if I don't get good marks?" These thoughts create fear and stress. Because of this, the student is not able to focus properly on their work.

Overthinking also reduces confidence. A student may start doubting their abilities even if they are well prepared. They may feel nervous before exams and forget things they already know. This makes their performance worse, not because they don't know the answers, but because their mind is too full of worries.

Another problem is that overthinking affects health. It can cause headaches, tiredness, and trouble sleeping. A student who cannot sleep well will feel weak and unable to study the next day. This creates a cycle of stress and poor performance.

Students should also learn to accept that not everything will be perfect. Mistakes are a normal part of learning. Instead of fearing them, students should see them as a chance to improve. This simple change in thinking can reduce a lot of stress.

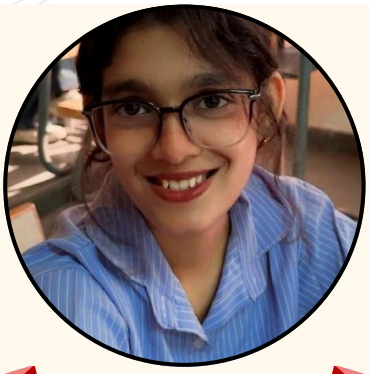
The best way to deal with overthinking is to stay focused on the present. Students should make a simple study plan and follow it step by step. Talking to friends, teachers, or family members can also help reduce stress. Taking short breaks, doing light exercise, and having a positive attitude can make a big difference.

In conclusion, overthinking is a big enemy for students because it wastes time, lowers confidence, and affects health. Instead of worrying too much, students should focus on their efforts and do their best. A calm mind always works better than a worried one.

MANSHA GANDHI, B.TECH

## "LIFE…"

Life is not always a happy song,
Sometimes it feels too hard, too long.
We smile outside, we laugh, we play,
But hide a thousand thoughts each day.
There are nights when tears don't stop,
When hope feels like it slowly drops.
When everything seems lost and far,
And we forget how strong we are.
Life teaches us in silent ways,
Through broken dreams and painful days.
It shows that falling is not the end,
But a new start we cannot pretend.
Some people come, some people go,
Some leave wounds we never show.
But every pain, every scar,
Makes us who we really are.
Life is a mix of joy and pain,
Of sunshine after heavy rain.
So hold yourself, don't fall apart,
Your strength lives inside your heart.
One day you'll smile, looking behind,
And thank the life you once declined.
Because every struggle, every strife,
Quietly shaped your beautiful life. want



ANAMIKA, ASH

## THE MEASURE OF A HUMAN

I am not just bones and skin,
Not just where my tales begins.
I am the quiet in a crowded room,
The rose that grew through layers of gloom.
I've walked with doubt & danced with pain,
Fell, then found my feet again.
Hope, to me, is not just light-
It's the will to burn through endless night.
What makes us human isn't breath,
It's love that outlives even death.
It's courage in the smallest form,
Kindness when the world's not warm.
We are art craved out of time,
A fleeting spark, a climb, a rhyme.
We break, we build, we rise anew,
We carry worlds and still push through.
So, judge me not by wealth or name,
Nor medals won or fleeting fame,
But by the hearts I choose to lift,
The silent battles, the unseen gift.
If I stand here, it's not alone-

carry those who've never known,
Their worth, their voice, their place to shine;
In lifting them. I found what's mine.
For being human is not just fate,
It's choosing love when faced with hate,
And if this poem should find its place,
Let it echo strength and grace.

HARENDER TEWATIYA, ASH

**"समय"**

मैं समय हूँ,
समय, वक्त, काल, युग, घड़ी—
अलग-अलग मेरे नाम हैं।
कुछ भी बुलाओ मुझे,
पर मानव मुझसे फिर भी अनजान है।

शक्तिशाली और बुद्धिमान भी. मुझसे घबराते हैं,
मुझे टालने के लिए , सब बहाने बनाते हैं।

जब खत्म हो जाते हैं सारे बहाने,
तब सब मुझसे ही आस लगाते हैं,
ना मिलूँ तो वो घबराते हैं।
किसी का मित्र, किसी के लिए गुरु बन जाता हूँ,
मैं कभी नहीं रुकता,हर पल बढ़ता जाता हूँ

बचपन से बुढ़ापे तक
सबका साथी बन जाता हूँ।

सपनों के पीछे भागो, तो मैं ही राह दिखाऊँगा,
जो मेरा सही उपयोग करे ,उसका कल बदल जाएगा,
मैं उसे महान बनाऊँगा।

मेरे बदलने पर लोग बदल जाते हैं,
सारे रिश्ते पीछे छूट जाते हैं।

अगर बीता हुआ समय निकल गया, तो लौटकर नहीं आता है।
अपने भविष्य के बारे में सोचकर
इंसान यूँ ही घबराता है।

कुरुक्षेत्र में न तीरों ने मारा,
न तलवारों ने हराया,
जिसने मारा, वह तो समय था,
अर्जुन तो बस एक सहारा था।
दुर्योधन अपने कर्मों पर
अंत में पछताता था।

कल भी मैं चला गया,
और आज भी जा रहा हूँ,
तू क्यों खड़ा घबरा रहा है?
श्री कृष्ण ने साफ कहा है—
बस कर्म करो, कर्म ही प्रधान है,
जिसने समय का सही उपयोग किया,
वही बना महान है।

मैं ही आरंभ हूँ,
मैं ही अंत हूँ,
मैं समय हूँ।

PRANAY JOSHI, ASH

## I AM NOT DONE YET.

They will see the result one day.
They will see the confidence.
They will see the success.
They will see the calm strength in my voice.
But they will never fully see the becoming.
They will not see the nights I questioned my own reflection.
They will not hear the conversations I had with myself at 2 a.m.,
trying to convince my heart not to give up.
There were days I felt behind.
Days I felt ordinary.
Days I felt like effort was invisible.
And invisibility is heavy.
It makes you doubt your value.
It makes you measure yourself against everyone else.
It makes you wonder if you are moving at all.
But growth is not loud.
It does not trend.
It does not announce itself.
It happens quietly —
in discipline chosen over distraction,
in consistency chosen over comfort,
in showing up when no one is watching.
I have faced silence.
I have faced comparison.
I have faced failure that felt personal.
But I stayed.
Not because it was easy.
Not because I was fearless.
But because somewhere inside me
was a voice stronger than doubt.
A voice that said —
"You were not made to quit halfway."
Every setback sharpened me.
Every rejection redirected me.
Every lonely moment forced me to build strength from within
instead of borrowing it from applause.
I stopped chasing validation.
I started building value.
I stopped asking, "Why is this happening to me?"
I started asking, "What is this teaching me?"
And slowly, painfully, powerfully —
I changed.
Not into someone perfect.
But into someone resilient.
One day they will call it success.
One day they will call it talent.
One day they will say, "It happened so fast."
But I will know the truth.
It did not happen fast.
It happened every single day
I chose not to surrender.
I am not ahead of everyone.

I am not better than everyone.
But I am better than who I was yesterday.
And that is enough.
This is not my peak.
This is preparation.
This is not the finish line.
This is foundation.
I am not done.
I am not late.
I am not lost.
I am building.
And when the world finally sees the
result,
it will only be witnessing
what I have been becoming all along.
I am not done yet.

# OUR STELLAR ACHIEVERS
## FT. UNIVERSITY RANKERS


PIYUSH, R-1


VIKAS, R-4


PULKIT, R-5


AMAN , R-6


YASHI, R-7


ABHIJIT, R-8


DISHA, R-9


PRITHVI RAJ, R-10


ANJUM BANO, R-1


CHESHTA, R-4


SIMRAN, R-5


LAKSHAY, R-6

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RITIK BISLA, R-9


KULJEET, R-10


NANDINI, R-1


ANKIT, R-7


AKANSHA, R-8


DRISHTI, R-9


KAJAL, R-8


ASHISH, R-10


GIRISH, R-2


GIRINDER, R-3

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BHOOMIKA, R-3

DIKSHA, R-9

PREETI, R-8

SANJANA, 6

MUSKAN, R7

PRIYANSHU, R-9

VAISHNAVI, R-9

KANIKA, R-4

KARISHMA, R-7

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SANIYA

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GIRISH

MOHD AITESHAM

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PIYUSH SHARMA


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ANKIT KUMAR


PIYUSH SHARMA

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CHESHTA

KOMAL

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DIYA GUGLANI

KOMAL

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VIKAS

ABHIJIT

## SEMESTER-8

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AMAN VERMA

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ANSHU

ASHWANI TANWAR

### SEMESTER-2

MANNAT RAWAT

ASHWANI TANWAR

RITIKA SINGH

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AKASH

HARSH AGGRAWA

### SEMESTER-4

ANUSHA SINGH

AKASH

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## Branch ECE

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FAISAL ANSARI


HIMANSHU

### SEMESTER-5


SHIVAM SHARMA


SWEETI

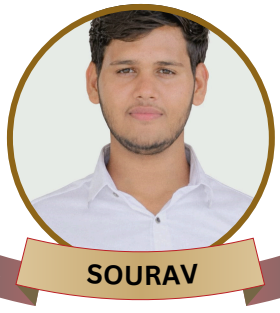

ABHISHEK KUMAR

## BRANCH ASH

### CE


ANCHAL SHUKLA


MOHIT


SOURAV

### ECE


SANJEEV


SHIVANGI


VISHAL

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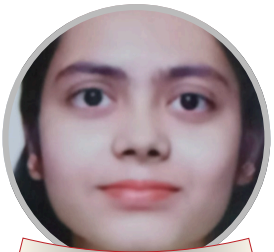
## DEPARTMENT OF CIVIL ENGINEERING

### SEMESTER-5

ANSHIKA NEGI



ANUSHKA BANARGEE

RAVI PRAKASH

### SEMESTER-6

JATIN CHAUHAN

ABHISHEK

ADITYA GUPTA

### SEMESTER-7

GIRISH KUMAR

GIRINDER KUMAR

SHIVANI

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SHUSHIL

NITIN DAGAR

SAHIL KHAN

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SURAJ


NIHAL

### SEMESTER-5


ROHIT


MD ARSH


TARUN

### SEMESTER-6


TARUN


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MOHIT PATEL


MANISH

### SEMESTER-7


NIKHIL


SONU


GOURAV

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VANSHIKA

HIMANI SINDWANI

KANIKA KAMBOJ

RENU

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BHOOMIKA

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DEEPALI

PRACHI

PRIYANSHU

SANJANA

AMAN PATHAK

# ECHOES OF CULTURAL YEAR





Dear Reader,

# Thank You!

sincerely thanks for taking the time to read our Annual Magazine. Your interest and support inspire us to continue bringing together creativity, ideas, and achievements in every edition.

@team_publication